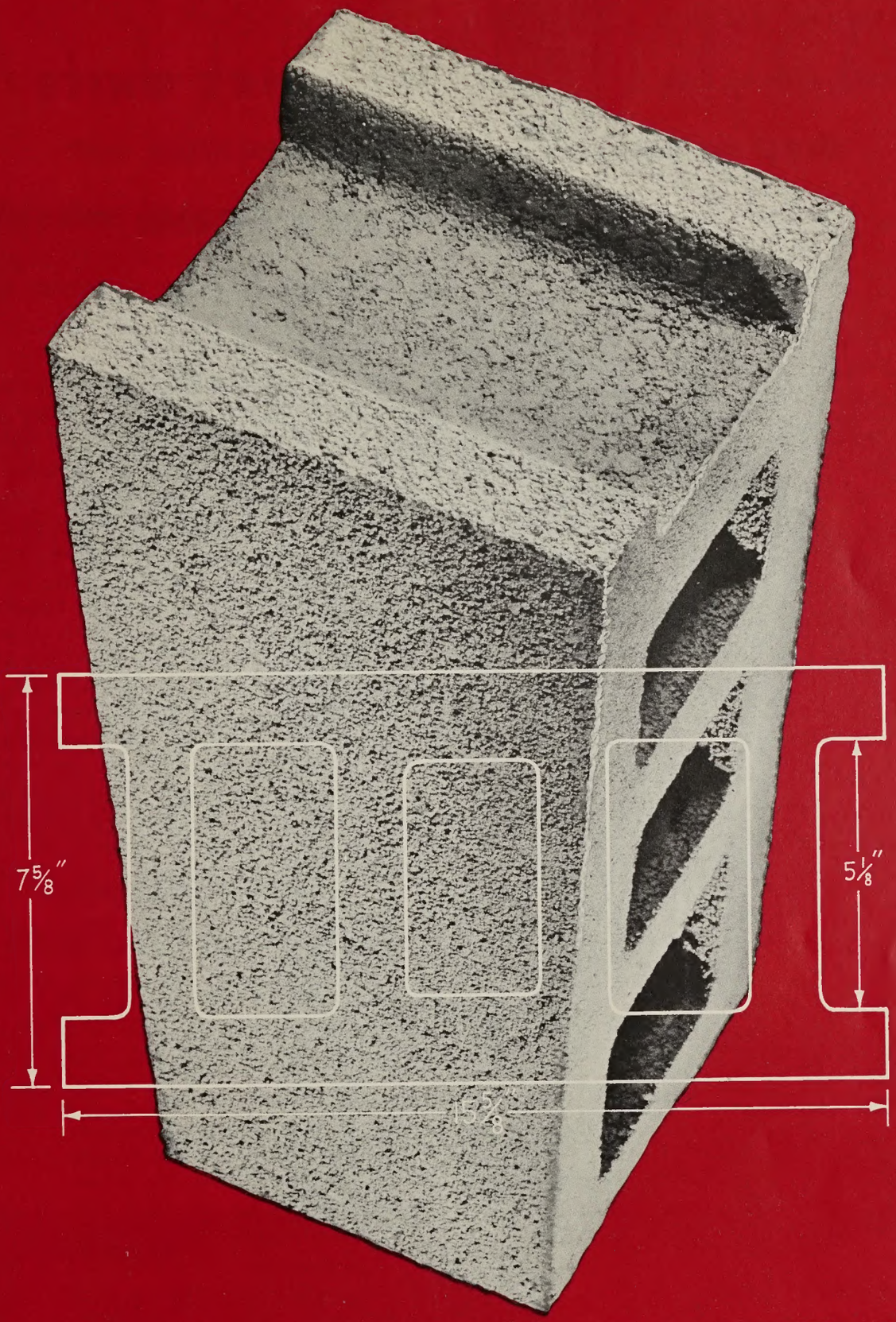


WAYLITE

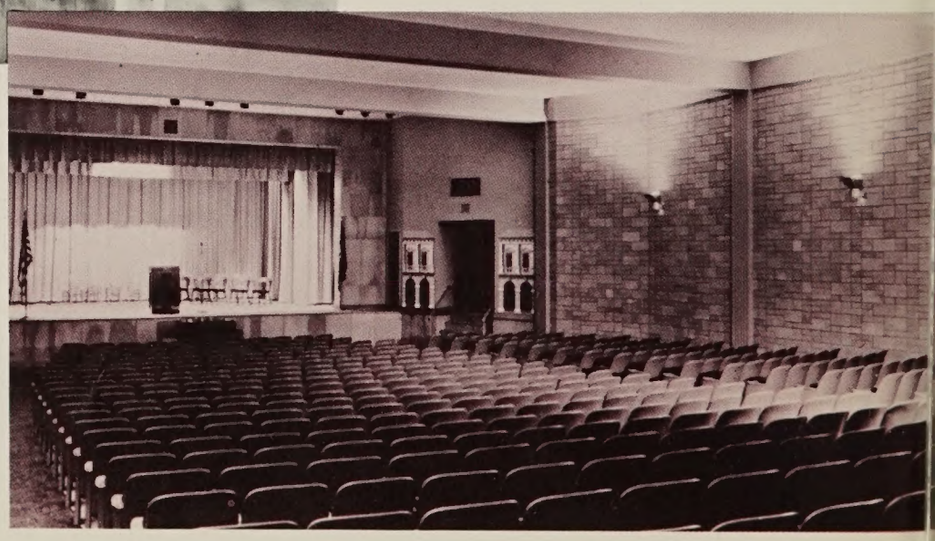
THE MODERN LIGHTWEIGHT MASONRY UNIT FOR WALLS AND FLOORS

WAYLITE MASONRY UNITS

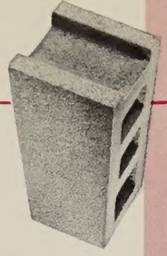
they make better buildings . . .

and save on cost

Masonry in various forms has been the preferred building material throughout man's recorded history. It provides shelter of great structural strength and integrity. It is highly resistant to deterioration by weathering. It is immune to destruction by decay or termites. It is fire-resistant—usually a legal requirement for many types of construction—and always a highly desirable characteristic in any building. Waylite masonry units offer all these traditionally superior qualities of masonry—and more besides! Waylite masonry is light in weight—an important factor in construction economy that recurs in various ways in the erection of a building. Waylite has high insulating values—gives better climate control for building interiors. It has valuable acoustical properties. Waylite aggregate and masonry units are available in the general area situated North of the Ohio river and from the Atlantic seaboard to the tier of states immediately West of the Mississippi river.



WAYLITE



the aggregate that gives Waylite Masonry Units so many good qualities

Waylite is a lightweight, cellular aggregate, refined and expanded by a process of agitating and rapidly cooling in an atmosphere of steam molten hot slag as it comes from the blast furnace at temperatures of 2500° to 3000°F. In this process the inherent gases expand and fill the material with minute air cells or bubbles completely sealed. These minute air cells are the active insulation and lightweight principle of all Waylite aggregates. After the processing at high temperature, the material is cooled and then specially crushed and sized for use in Waylite masonry units.

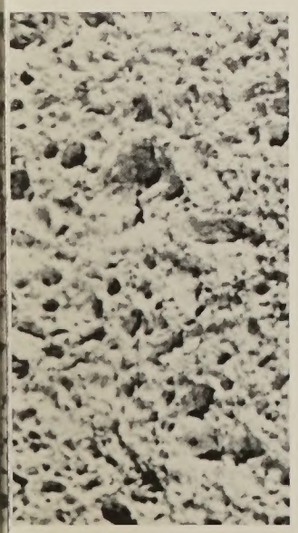
Waylite is manufactured by a patented process controlled exclusively by the Waylite Company in the United States. It is the principal aggregate, commercially available, having the unique combination of physical characteristics listed below.

Waylite aggregate plants have a total production capacity in excess of 2,000,000 cubic yards annually.

Physical characteristics of Waylite aggregates

CHEMICAL COMPOSITION. Waylite consists of the silicates and the alumino silicates of lime, inert mineral compounds. Sulphur compounds present (about 1½% as sulphides) do not react harmfully on reinforcing steel.

PHYSICAL STRUCTURE. Waylite under the microscope as illustrated below is a mass of minute non-connecting bubble-shaped air cells surrounded by thin walls of slag producing a high strength to weight ratio.



SOUNDNESS. The coarse aggregate passes A.S.T.M. Sodium Sulphate soundness tests for concrete aggregate.

INSULATION. A special Waylite grading for inorganic loose fill insulation has a conductivity (k) value of .75.

ABSORPTION. For a lightweight aggregate, the absorption of Waylite is comparatively low. Using standard test methods, the fine grading absorbs about 6% and the coarse grading absorbs about 8%.

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LIGHT WEIGHT

Weighs 32 lbs. per square foot of wall surface.

STRENGTH

Resists crushing strength of over 45 tons.

INSULATION

Highest obtainable with firesafe single unit construction.

ACOUSTICS

Waylite's exposed surface eliminates need for acoustical treatment.

FIRESAFE

Highest fire protection of *any* type of hollow load bearing unit.

Note: Data given are based on 8″ x 8″ x 16″ hollow unit.

NAILABLE

No need for special fastening devices, saves money! Speeds construction!

LOW COST

Costs far less in the wall than any comparable material.

SPEED

Waylite walls go up fast . . . less labor . . . less mortar.

FINISHES

Big variety of interior and exterior wall treatments.

NONSTAINING

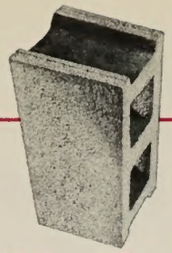
Waylite is free from impurities which cause "staining" or "popping."

PLASTER BOND

. . . textured surface provides excellent mechanical bond, plus even suction.

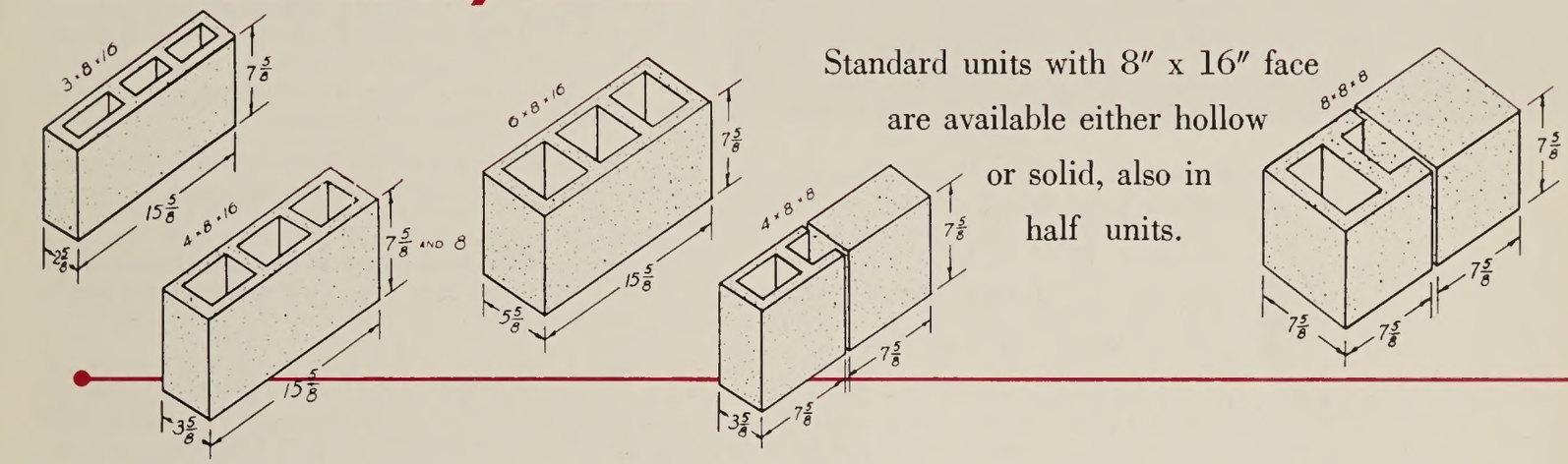
MEETS ALL SPECIFICATIONS

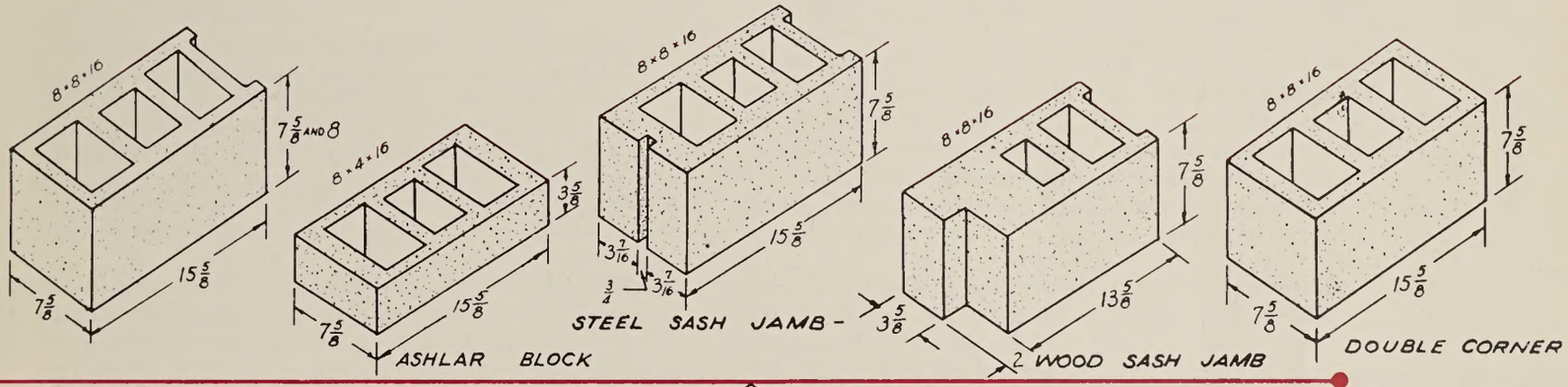
. . . including (a) Federal and (b) American Society for Testing Materials.

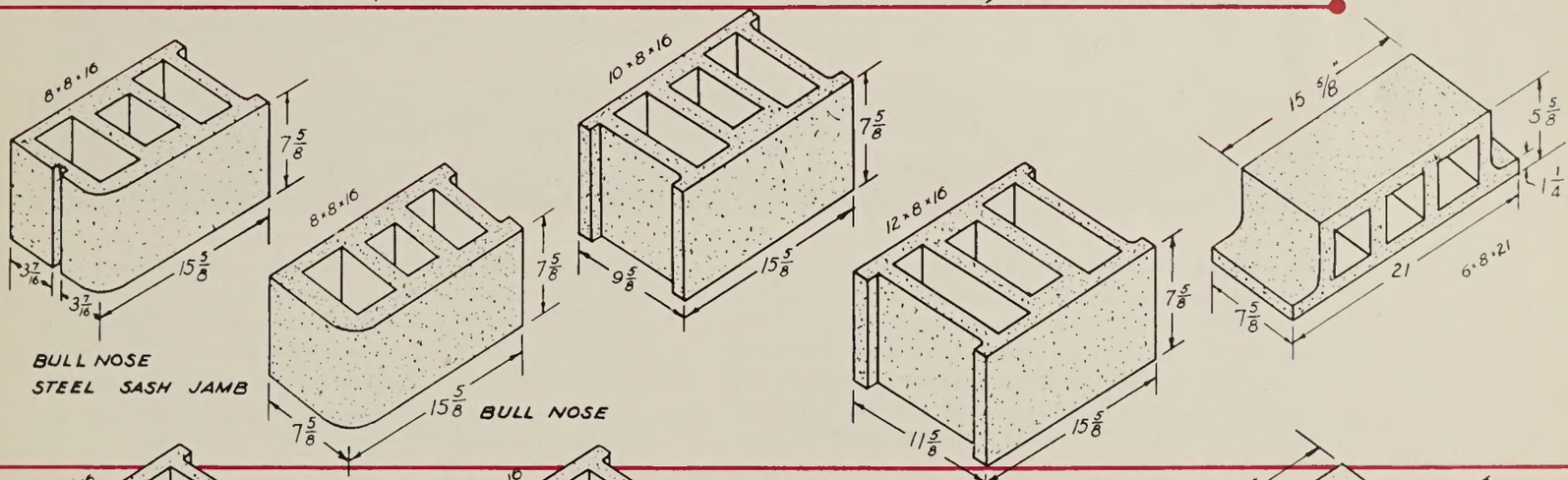


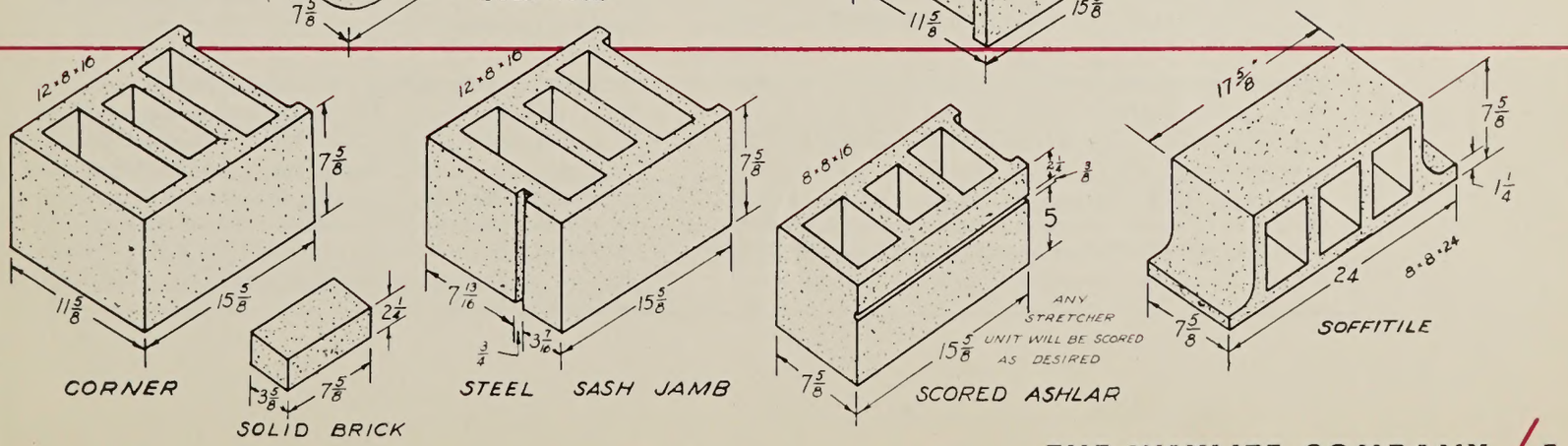
There's a WAYLITE Shape and Size For Every Need

Standard units with 8″ x 16″ face are available either hollow or solid, also in half units.









PHYSICAL PROPERTIES

of WAYLITE Masonry Walls

Design Data

STANDARD MODULAR SIZES—Waylite Masonry units are made with standard modular face dimensions 7⅝″ high and 15⅝″ long and are available in thicknesses ⅜″ less than the nominal 3″, 4″, 6″, 8″, 10″ and 12″ thickness. When laid up with ⅜″ thick mortar joints the units are 8″ high and 16″ long requiring 113 units per 100 sq. ft. of wall area. Hollow and solid Waylite partition and Furring units have nominal thickness of 3″, 4″, 6″ and 8 inches. Hollow and solid Waylite load bearing units have nominal thickness of 4″, 6″, 8″, 10″ and 12″ and are also available in half lengths. Standard specials such as steel and wood sash jambs, Bull Nose and Closures are also available in full and half lengths.

ALLOWABLE LOADS—Waylite hollow masonry unit walls have allowable loads of 70 psi for a 1-1-6 cement-lime mortar or a 1-3 masonry cement mortar and 85 psi for a 1-3 Portland cement mortar. For solid Waylite units allowable loads are 125 psi and 175 psi respectively for the above two mortar types.

LATERAL SUPPORT—The distance between lateral or vertical supports at right angles to the wall may be eighteen times the nominal wall thickness for hollow Waylite unit walls and twenty times the nominal wall thickness for solid Waylite unit walls.

BOND—When two Waylite units make up the thickness of the wall, the stretcher courses should be bonded every fifth course by lapping 3¾″ over the unit below, or by lapping, with units 50% greater in thickness than the unit below every third stretcher course.

Waylite masonry units are laid with mortar coverage of the face shells only in both the horizontal and vertical joints.

Faced walls of brick size units should be bonded with a full header course in each seven courses to the Waylite unit backup.

WEIGHT OF WALL—The average weight of a Waylite unit wall varies from 20 to 48 lb. per square foot, depending on the wall thickness as shown in the table.

ECONOMY—The marked reduction in dead load where Waylite walls are used permits economies in the design of the supporting structure. The lightness in weight of the Waylite units, coupled with the large wall area per unit (0.9 square feet) reduces the mason labor and mortar required, which results in appreciable saving in the total wall cost.

SPECIFICATIONS—Waylite masonry units are manufactured in accordance with Federal Master Specification SS-C-621, type Ia, and A.S.T.M. specification C90 for hollow load bearing masonry units, and A.S.T.M. specification C145 for solid load bearing masonry units.

Masonry Wall Properties

FIRE RETARDANT RATING—The fire protection obtained with Waylite unit walls is the highest for any type of load bearing hollow unit walls. Tests at Underwriters' Laboratories, Inc., and the National Bureau of Standards have repeatedly indicated the unique fire retardant properties of Waylite masonry construction. Fire retardant values for the different wall thicknesses and designs of units are given in the table.

SOUND ABSORPTION—The exposed surface of Waylite masonry walls of all thicknesses have marked sound absorption characteristics, due to the porosity of the surface. The noise coefficient of unplastered Waylite masonry walls is in excess of 45%. These values are based on the average absorption of sound varying in intensity from 125 to 4000 cycles per second. The noise coefficient of these walls is reduced about 5% when the wall is decorated with water base paints.

THERMAL INSULATION—Thermal conductivity values of Waylite masonry walls, due to the nonconnecting air cells in the aggregate, are in the lowest range obtainable with masonry construction. The heat transmission coefficient "U" of a plain 8″ Waylite hollow masonry wall is .33 Btu.

Values for other wall thicknesses and finishes are indicated in the table.

SOUND TRANSMISSION—Waylite masonry partitions reduce the intensity of sound transmitted through the wall to a remarkable degree. The decibel reduction obtained with plain and painted Waylite partitions makes their use particularly desirable where the retention of the superior sound absorption and decorative surface of Waylite units is desired. Such treatment eliminates the need of plaster finishes to obtain adequate decibel reduction combined with fire resistance.

CONSTRUCTION FEATURES

of WAYLITE Masonry Walls

PLASTER BOND—The uniform textured surface and even suction of Waylite masonry units provide an excellent permanent base that facilitates plastering with a minimum of waste during application.

NAILABILITY—Grounds, base boards, and interior trim can be nailed directly and firmly to the Waylite masonry walls, thus eliminating the use of nailing strips and plugs. This is a very desirable feature in masonry construction and speeds up erection of the building.

COLOR—Waylite masonry units are light gray in color, with an attractive textured surface. Where it is desirable to develop sound absorption characteristics of the wall, or where economy in construction is a primary function in the building, untreated walls of Waylite units will provide a pleasing light colored wall with high light reflectivity. The lightness in color of the plain wall also permits painting with pastel shades in a most economical manner.

PAINTING EXTERIOR WALLS—An attractive waterproof finish for exterior walls consists of two coats of Portland cement base paint, meeting Federal Master Specification TT-P-21, applied as follows:

Uniformly dampen wall and apply paint, mixed to creamy consistency. Scrub into surface with a fiber brush with 1½″ to 2″ bristles. Dampen painted surfaces the morning following application with a fog spray. Apply second coat as above to the dampened wall not less than two days after application of first coat. Dampen second coat with fog spray the morning after application.

In the following table the various physical properties of units and walls built with standard types of Waylite units are shown. Special sizes can be manufactured to meet architects' specific requirements.

Physical Data-*Waylite Concrete Masonry Units and Walls*

WAYLITE 7⅝x15⅝ Face Units			WAYLITE MASONRY WALL PHYSICAL PROPERTIES									
Nominal Thickness of Unit	Average Face Shell Thickness Inches	Minimum % Solid	Average Wt. per Sq. Ft. Plain Wall lb.	Fire Retardant Rating Hours (1)			Sound Transmission Decibel Reduction(2)			Sound Absorption Plain Wall	Thermal "U" Value(3)	
				Plain Wall	Plaster 1 side	Plaster 2 sides	Plain Wall	Painted 2 sides (5)	Plaster 2 sides		Plain Wall	Furred & Plastered
3″ Solid	1″	75	20	1	1½	2	—	44	46	45%	.52	.33
4″ Hollow	1″	60	21	1¼	1¾	2½	33	46	50	45%	.51	.32
4″ Solid	1 3/16″	75	26	1½	2	2½	—	—	50	45%	.48	.31
6″ Hollow	1″	50	26	1½	2	2½	40	52	53	45%	.47	.30
6″ Hollow	1⅜″	62	31	2	2½	3½	—	—	53	45%	.35	.24
8″ Hollow	1¼″	55	37	3	4	5	44	—	53	50%	.33	.24
8″ Hollow	1½″	62	41	4	5	6	—	—	53	50%	.32	.23
10″ Hollow	1¾″	60	48	5	6	7	—	—	55	50%	.31	.23
12″ Hollow	1¾″	50	48	5	6	7	—	—	55	50%	.31	.23
10″ Cavity 2″ air space	2-4″ hollow	60	42	4	5	6	57(4)	—	—	50%	.23	.18
7″ Cavity 1⅜″ air space	2-3″ solid	75	44	4	5	6	56(4)	—	—	50%	—	—

(1) Fire retardant ratings are given in National Bureau of Standards Report, Fire Resistance Classification of Building Construction BMS92.
(2) Sound Reduction and Sound Absorption values based on tests at Riverbank Laboratories, Geneva Ill.
(3) Thermal Insulation Values based on tests at University of Minnesota and National Bureau of Standards using the guarded Hot Box method.
(4) ⅜″ of Mortar on one inner face.
(5) Two coats of Portland cement base paint scrubbed on each face.

WAYLITE UNITS

for floor and ceiling construction

WAYLITE *Soffitile* CEILINGS

Waylite "Soffitile" is a special lightweight precast concrete unit developed for acoustical treatment of ceilings in light occupancy buildings. The design incorporates an integral soffit with a floor filler tile and provides a flat ceiling with a uniform acoustical surface. In addition, the floor construction is effective as a fire retardant, sound deadener, and thermal insulator. The unit is used in conventional tile and joist concrete floor construction, using recognized design formulas. The dead load is considerably reduced when compared with solid slab construction of equal load carrying capacity, although the total depth of the slab is increased slightly.

SIZE—Waylite "Soffitile" are made in two sizes with ceiling faces of 8″ x 21″ (1⅙ sq. ft.) and 8″ x 24″ (1⅓ sq. ft.) and depths of 5⅝″ and 7⅝″, weighing 24 lb. and 34 lb. respectively.

DESIGN DATA—A design table based on American Concrete Institute Reinforced Concrete Code is available upon request. This table provides the necessary data to calculate steel reinforcement requirements in accordance with local code provisions for ribbed concrete slabs using tile fillers. The net compressive strength of the "Soffitile" unit is 2500 lb. p. s. i.

STRENGTH AND DEFLECTION—Strength and stiffness of floor construction is materially increased due to the use of the tile filler instead of steel pan forms as the thickness of the tile in compression is neglected in design calculations.

SOUND ABSORPTION—The noise coefficient of the "Soffitile" ceiling is in excess of 45% when tested in a standard reverberation chamber.

SOUND TRANSMISSION—The sound transmission reduction in decibels for the floor construction will be in excess of the 50 decibels obtained with 6″ plastered Waylite masonry partitions, due to the increased weight and thickness of the construction.

FIRE PROTECTION—The fire retardant rating of the "Soffitile" floor construction with 1½″ concrete slab will be in

WAYLITE *Fillertile* FLOORS

Waylite Fillertile is a standard precast lightweight floor unit used in the construction of concrete floors with smooth unobstructed ceilings in light-occupancy buildings. In addition to its firesafety, this floor construction is effective as a sound deadener and thermal insulator and has good sound-absorption characteristics.
Fillertile is used in conventional tile and joist floor construction, using recognized design formulas contained in practically all building codes. The dead load is considerably reduced when compared to solid slab construction of equal load capacity, with only a slight increase in the slab depth.

SIZES—Waylite Fillertile are made with a ceiling face of 7⅝″ x 15⅝″ and depths of 3⅝″, 5⅝″, 7⅝″, 9⅝″ and 11⅝″, weighing about 17, 20, 30, 36 and 40 lbs. respectively.

DESIGN DATA—A design table showing safe superimposed loads for the various sizes and spans with 2½″ topping is available upon request. This hooklet also contains recommended construction details and suggested specifications. The American Concrete Institute, Building Code Requirements for Reinforced Concrete provisions were used in the preparation of these design tables.

SOUND ABSORPTION—The noise coefficient of Fillertile ceiling is in excess of 35%.

SOUND TRANSMISSION—The sound transmission reduction in decibels for Fillertile floor construction will be equivalent to about fifty decibels.

FIRE PROTECTION—The fire retardant rating of Fillertile floor construction of 2½″ concrete slab will be from two to four hours, depending upon floor depth.

PLASTER BOND—The even suction of Waylite Fillertile, combined with a textured surface, provides a superior base for direct application of plaster as a ceiling finish.

APPEARANCE—The pattern of the exposed flush ceiling is attractive and may be painted to suit any decorating theme.

ECONOMY—Fillertile floor construction is one of the most economical firesafe floors to construct, requiring a minimum of forming, and lightweight units place rapidly and readily.

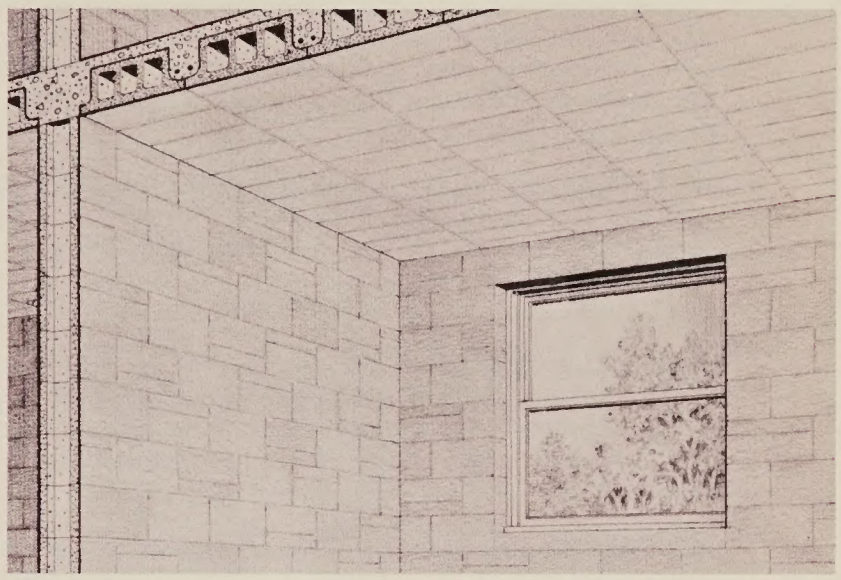
A WAYLITE SOFFITILE OR FILLERTILE FLOOR COSTS LESS THAN THE RUG

give highly efficient acoustical treatment at low cost

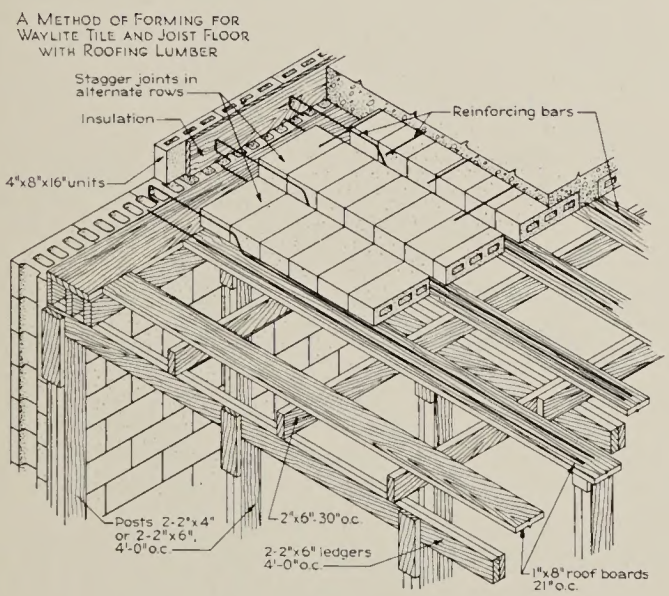
excess of two hours, which is the value obtained with similar Waylite units with ½″ plaster on one side, due to the increased thickness and weight of the construction. The tension steel in the joist has one inch additional fire protection, due to the soffit design.

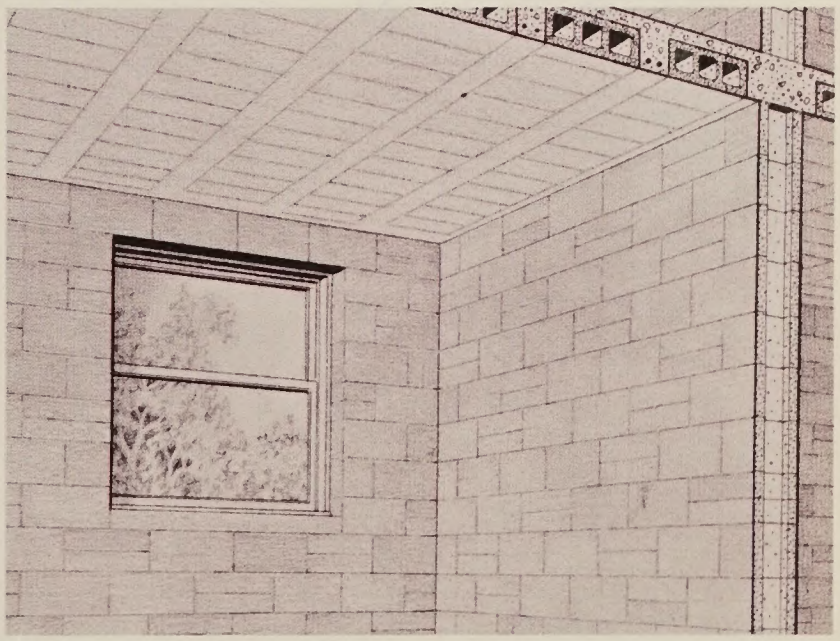
APPEARANCE—The well proportioned face dimensions of the units when laid with staggered joints present an attractive ceiling surface with a light gray color. The ceiling may be decorated with synthetic resin water base paints which will reduce the noise coefficient to about forty per cent.

ECONOMY—"Soffitile" floor construction is economical because an acoustical ceiling is obtained without the addition of applied finishes. The construction cost is also minimized because the lightweight "Soffitile" place rapidly and the small amount of concrete required reduce the job placing costs. Form lumber contacts only dry precast units and may be reused with a minimum of waste.



firesafe • easy to use • insulates • deadens sound • low cost





WHICH COVERS IT AND IS THE BACK BONE OF A FIRESAFE MASONRY HOME!

WAYLITE AGGREGATE

for plain and reinforced concrete, also for roof and floor fills

Waylite when used as an aggregate in concrete creates a lightweight building material having an optimum combination of desirable properties. These are adequate compressive, flexural and bond strength, superior fire resistance, increased thermal insulation, excellent sound absorption, reduced sound transmission, and lightness in color, all obtained at an economical cost. This combination of desirable properties makes Waylite concrete particularly suitable for lightweight structural concrete, fireproofing structural steel, precast structural products, lightweight floor and insulating roof fill, lightweight concrete masonry units, and special precast acoustical wainscoting, wall and ceiling units.

USES—WAYLITE STRUCTURAL CONCRETE is particularly suitable where a reduction in dead weight of 30% to 35% permits design economies, for fireproofing structural steel columns, and for reinforced precast structural members such as floor and roof tile and precast joists and lintels.

STRUCTURAL DESIGN—Reinforced Waylite concrete may be designed according to the principles now accepted for heavy weight concrete, except that more shear steel must be used because of the somewhat lower tensile-compressive strength ratio.

MIX DESIGN—Proportioning—Waylite concrete requires a higher proportion of fine aggregate in relation to coarse than ordinary aggregates. This is due to the lower top size of the coarse aggregate (7/16″) and the additional angularity or harshness of the crushed fine and coarse aggregates.

MIXING—The mixing of Waylite concrete requires a somewhat different manipulation procedure than for heavy aggregates. To obtain maximum workability with minimum weight, the aggregate and water should be mixed for one-half minute before the addition of the cement, and then mixed for at least an additional two minutes. A mix which appears harsh at first will improve in plasticity with continued mixing without additional water.

WAYLITE FLOOR FILL—Waylite concrete floor fill mixes combine the desirable characteristics for this particular use. In addition to being incombustible and increasing the fire retardant rating of the floor construction, the floor fill acts as a sound deadener, provides additional thermal insulation, is not affected by moisture or temperature changes, and is readily placed around pipes and conduits economically with a minor addition to the dead load. (Mixes 1 to 3)

WAYLITE ROOF FILL—The principal purposes of Roof Fill and Cant Strips is to provide ample slope for rapid run-off to the drains, incombustibility, thermal insulation, minimum dead load, and a suitable base for the applied roofing. The special Waylite roof fill mixes recommended for this use are

WAYLITE BACK-UP WALLS AND

WAYLITE MASONRY UNITS provide a superior wall unit to back up expensive masonry facings of all types, because of their many desirable properties, in addition to the marked economy of the construction. They are particularly desirable in all panel, curtain, and enclosure walls, where the weight of the complete structure is a major factor in the structural design. Following is a brief summation of the major desirable properties incorporated in the wall when Waylite units are used for backup construction:

LIGHTNESS IN WEIGHT—The weight of a faced wall with Waylite backup is reduced 20 lb. per square ft. for 4″ backup in 8″ thick-faced walls and reduced about 40 lb. with 8″ backup in 12″ thick-faced walls when compared to brick-size unit backup.

FIRE RETARDANT RATING—Because of the high fire retardant rating of Waylite masonry, the fire retardant rating of Waylite backup walls will be in excess of five hours.

THERMAL INSULATION—The thermal insulation value will be increased in all faced masonry walls using Waylite backup.

PLASTER BOND—Waylite backup units provide excellent plaster bond where the direct application of plaster is desirable.

FURRING AND FIREPROOFING—Waylite furring and fireproofing units, when used with Waylite backup, provide uniform wall texture for applying any type interior finish.

NAILABILITY—Grounds, baseboards, and trim may be nailed directly to the Waylite backup units.

APPEARANCE—In many types of buildings, the high light reflectivity of the off-white Waylite backup walls, with their pleasing textured surface, eliminates the need for additional interior finish. The walls also may be painted directly with Portland cement or synthetic resin cold water paints.

MORTAR ECONOMY—There will be a marked saving in mortar requirements with the use of Waylite hollow masonry backup units instead of brick-size units equivalent to 33 to 50%, depending on the total wall thickness.

SIZE OF BACKUP UNITS—Waylite backup units, 3⅝″, 5⅝″, 7⅝″ and 11⅝″ thick, all have the same nominal face dimension. Each 4″ Waylite wythe equivalent replaces 6 bricksize units, and the mortar required to lay them. This is one of the major reasons for the economy of Waylite backup construction. See Table on page 7 for detailed summation of physical properties of the various size units.

INTERIOR PARTITIONS —All the desirable properties of Waylite masonry unit walls, such as economy, superior fire retardation, excellent plaster base, light weight, nailability, and decorative features provide an ideal unit for construction of partitions in all types of firesafe buildings. Waylite partition and furring units are available in 1⅝″, 2⅝″, 3⅝″, 5⅝″, and 7⅝″ thickness, all with the same nominal face dimension.

light in weight (46 to 60 lbs. per cu. ft.), permanent, fireproof, have excellent thermal properties, and are readily placed and screeded to the desired slope shown on the plans. The minimum thickness for Waylite roof fill mixes should not be less than 2″. (Mixes 4 to 6)

Waylite aggregate for floor and roof fill mixes provides a uniform material, properly graded, with adequate technical data and a successful use experience on many types of buildings. The following tabulation presents suggested mixes, weight per cubic foot, compressive strength, and thermal conductivity values.

WAYLITE FLOOR AND ROOF FILL DATA

Mix No.	Proportions By Loose Dry Volume	Strength 28 Days psi	Approx. Weight Dry Lb. Cu. Ft.	Heat Conductivity (k) Btu
1	1-3-3	1000	85	1.80
2	1-4-4	600	80	1.70
3	1-5-5	300	75	1.60
4	1-0-7	300	60	1.50
5	1-0-8	225	56	1.45
6	1-0-10	150	46	1.05

WAYLITE STRUCTURAL CONCRETE DESIGN FACTORS AND MIX DATA

WAYLITE CONCRETE			RECOMMENDED STRUCTURAL DESIGN FACTORS					APPROXIMATE MIXES		QUANTITIES REQUIRED PER CU. YD. LOOSE DRY VOLUME			
Strength psi		Approx. Weight lb. cu. ft.						Mix Loose Volume	Water Gallons Per Sack	Cement Sacks	Fine Waylite Cu. Yd.	Coarse Waylite Cu. Yd.	Sand* Cu. Yd.
Compr.	Flex.		n	k	p	j	K						
2000	500	100	16	.39	.008	.87	136	1-2¼-2½-¾*	9.4	6.4	.53	.60	.17
2500	625	102	15	.43	.011	.86	184	1-2-2¼-¾*	8.2	7.2	.53	.60	.20
3000	700	104	14	.46	.014	.85	232	1-1¾-2-½*	7.3	8.1	.54	.60	.15
3500	750	106	13	.48	.017	.84	281	1-1½-2-½*	6.5	8.8	.49	.65	.17
4000	785	108	12	.49	.020	.83	326	1-1½-1¾-½*	5.9	9.6	.53	.62	.18

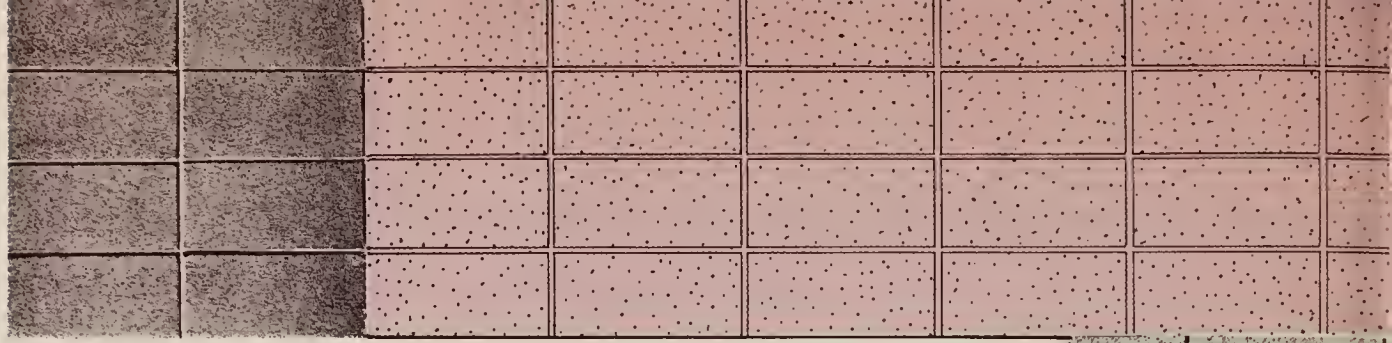
The addition of Approved Concrete Air Entraining agents materially improve the workability of Waylite Concrete mixes.

*Sand shall be fine siliceous bank, lake, or mason sand.

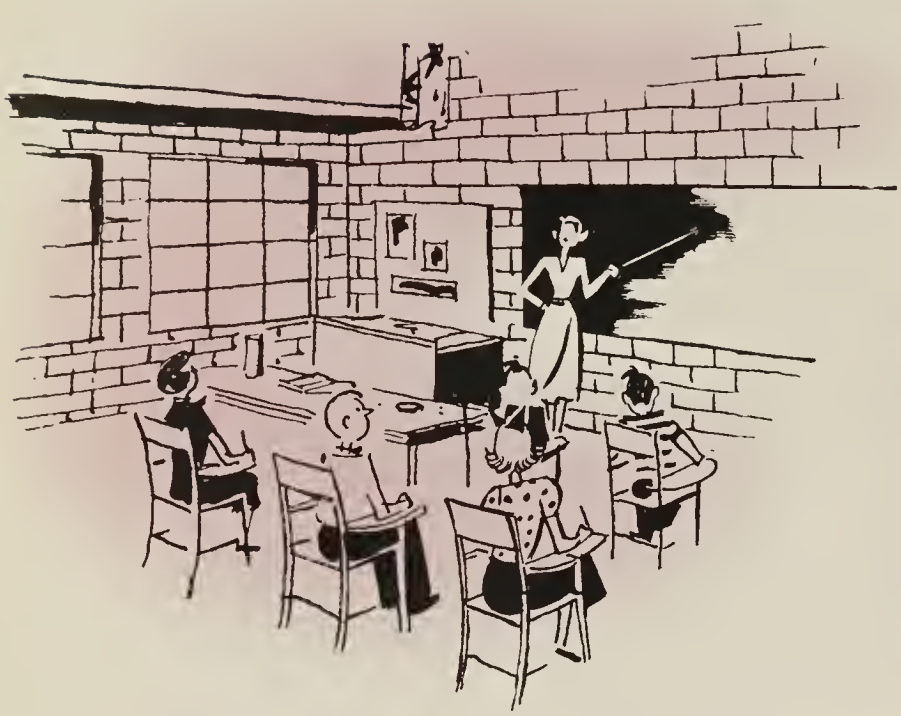
The above data is a condensed summary of comprehensive test data and job experience. It is intended as a guide to architects and engineers in the design of Waylite Concrete. For additional information, please write our nearest office.

PARTITIONS

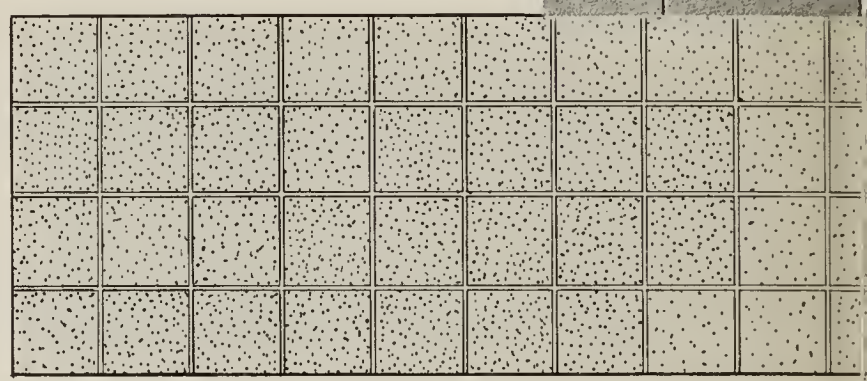
Excellent example of exposed back-up and partitions in a modern building



One of the most popular modern patterns. Units are shown in horizontal stacked bond.

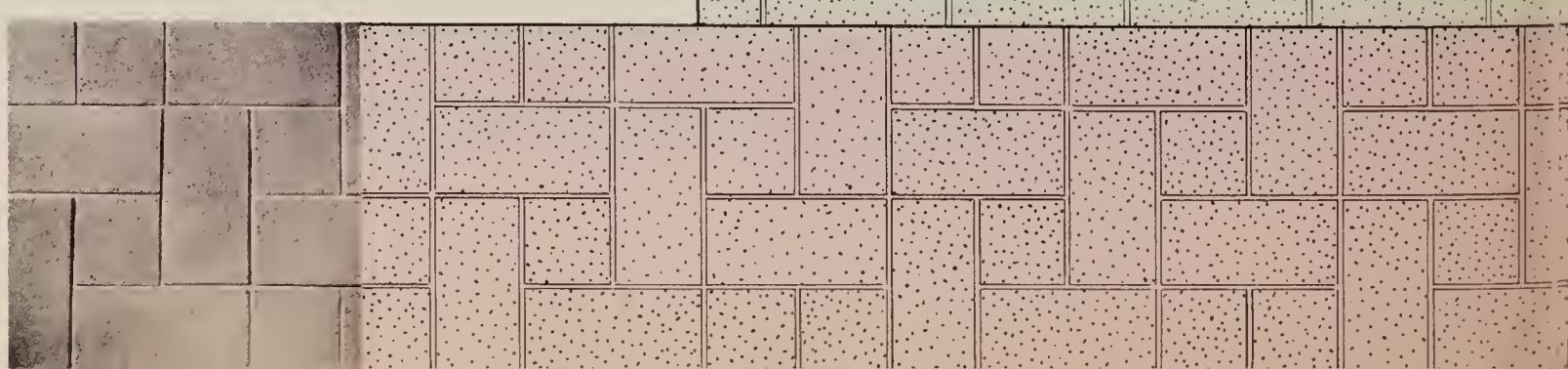


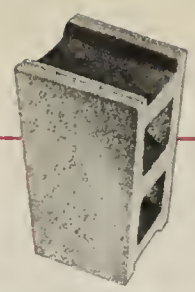
Running bond in alternating 4″ and 8″ courses produces this interesting effect.

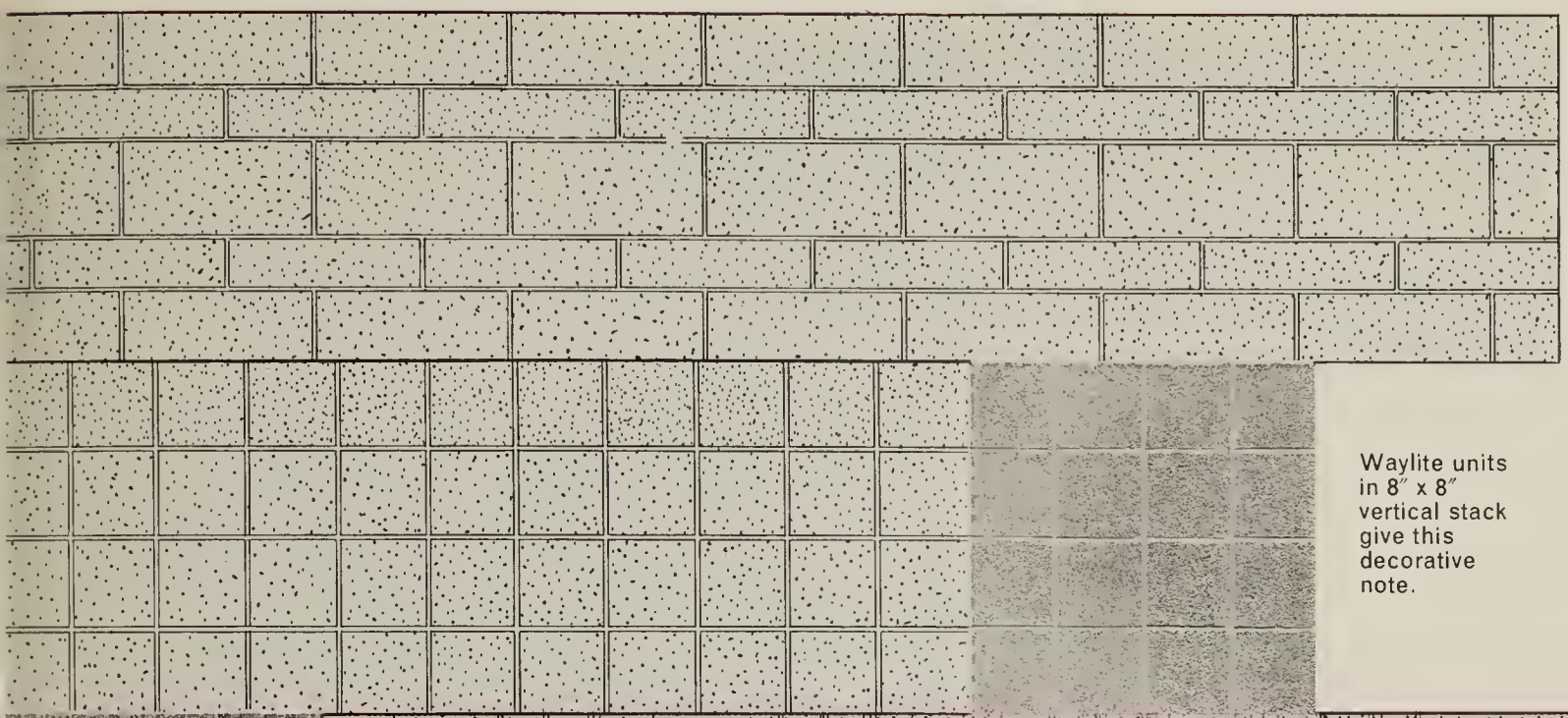


This parquetry-like design with two sizes of half height units makes an attractive wall.

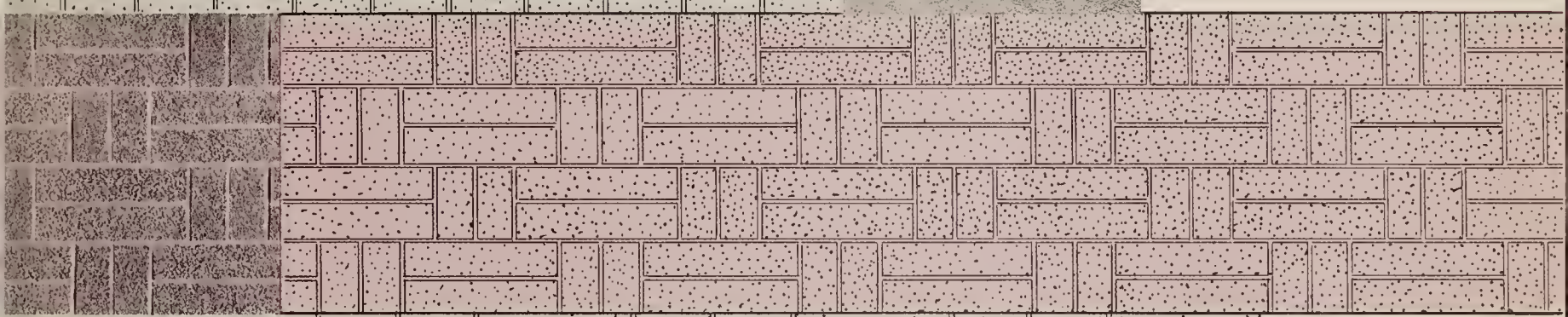
Patterns and colors and textures! These are the things of which beautiful interiors are made! And on these pages are shown a few of the decorative effects that may be had with Waylite interiors. You may minimize the masonry effect—you may accentuate the masonry effect—handle it with either traditional or modern treatments as you choose! Here is medium for room interiors that responds to decorative ideas and skills and offers a wide range of lovely Waylite finishes suitable for any type of building.



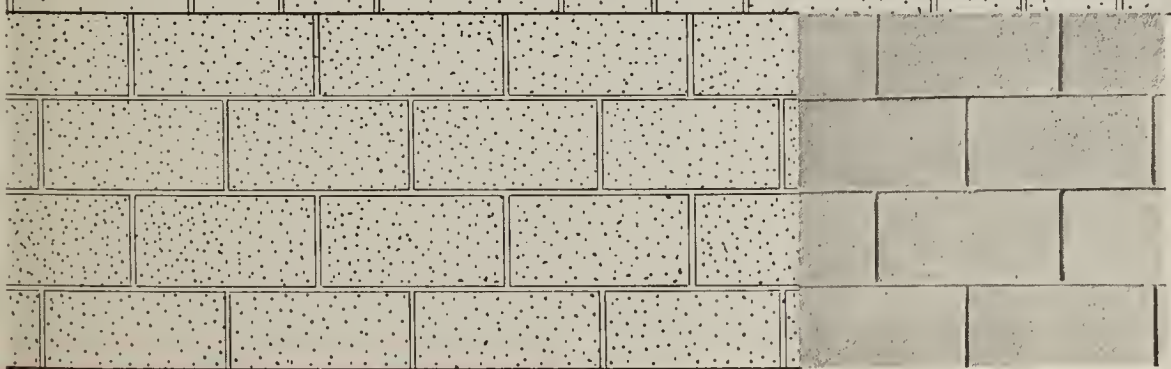




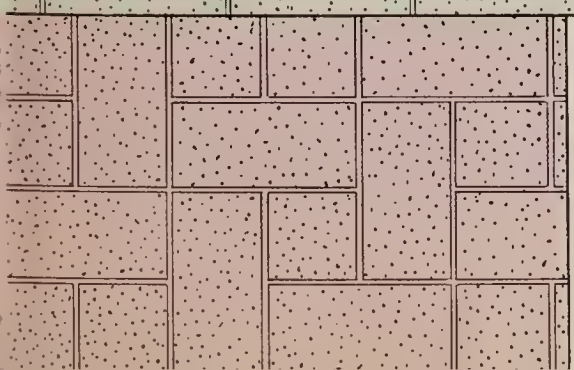
Waylite units in 8″ x 8″ vertical stack give this decorative note.



8″ x 16″ units make this effective Basket Weave Waylite interior.

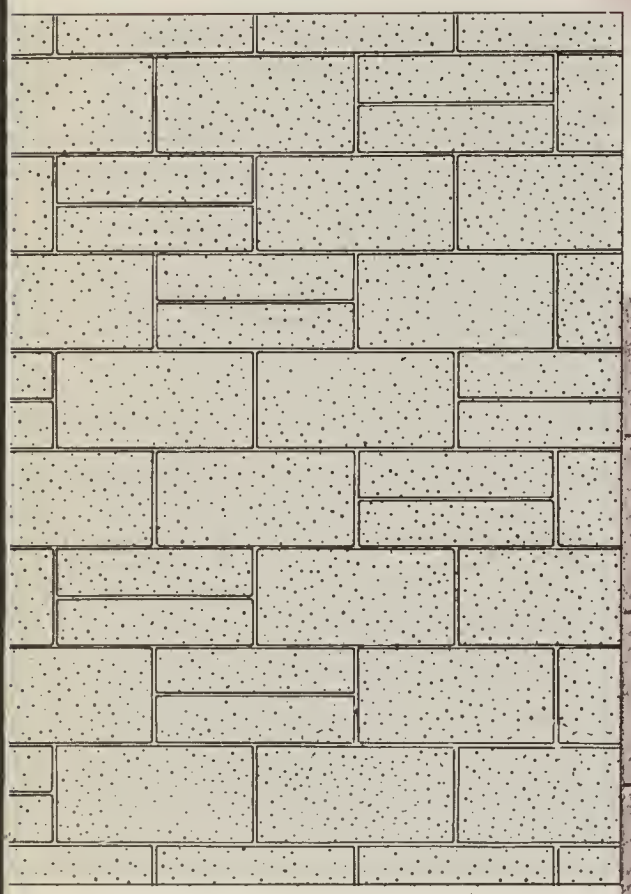


Traditional use of standard sized 8″ x 16″ units in running bond.



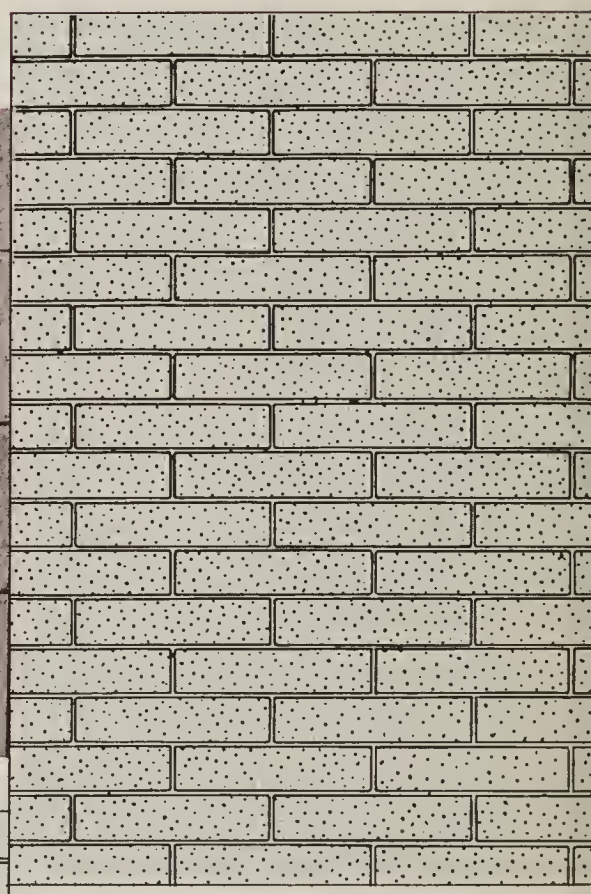
Another interesting variation of the Basket Weave pattern using 8″ x 8″ and 8″ x 16″ units.

Waylite masonry exteriors can be as varied as the talents of the designers who plan them—a remarkably rich field for creative work. There are many elements to work with . . . the different unit sizes . . . used singly or in combination . . . the lights and shadows of mortar joint treatments . . . the natural texture of Waylite units . . . the colors and tints of portland cement paints and stuccos . . . the trims and veneers with other masonry materials. A few of the many Waylite exterior effects are shown on this page.

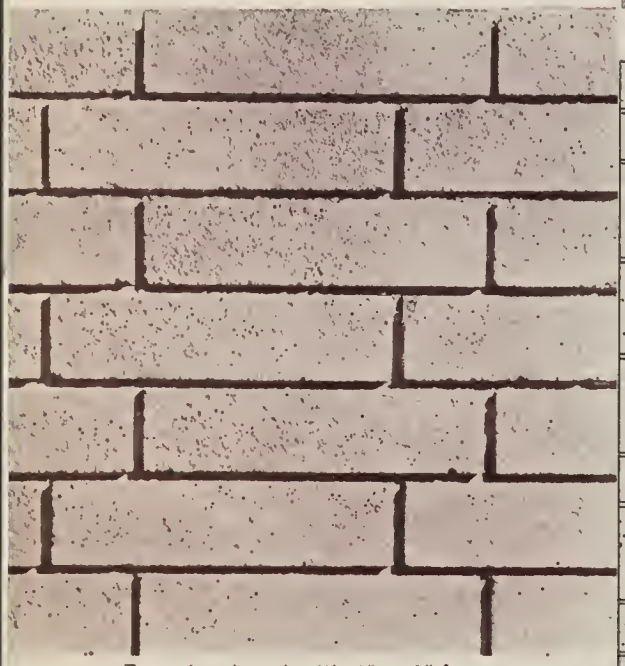


Coursed Ashlar No. 3 4″ x 16″ and 8″ x 16″ Units

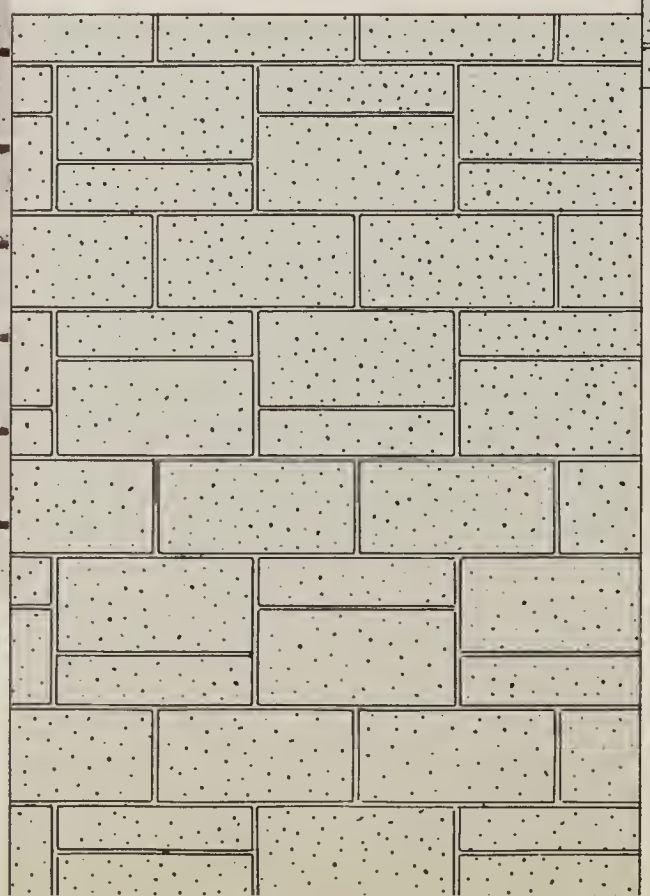
Running bond with 8″ x 16″ face



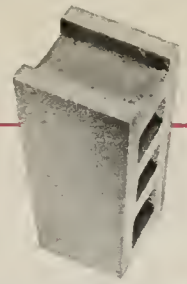
Running Bond 4″ x 16″ Units



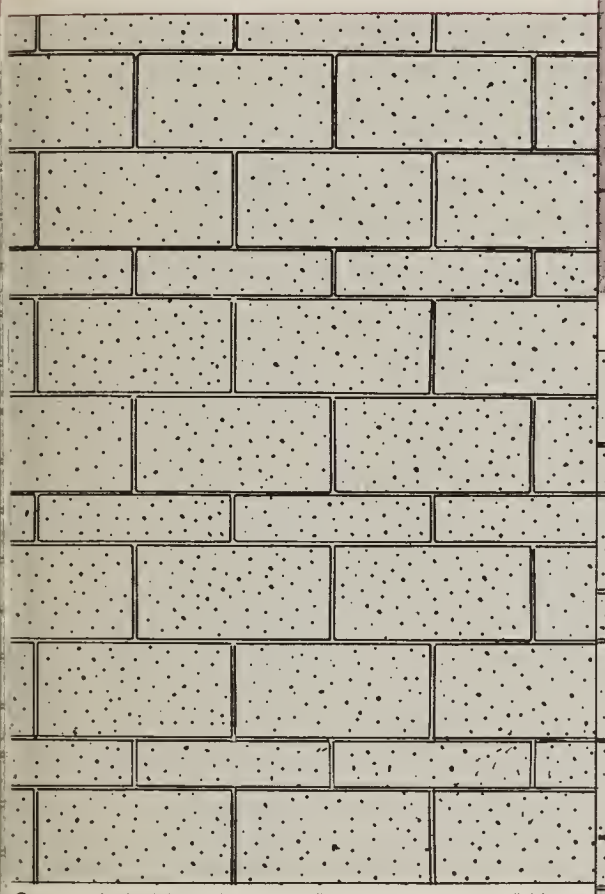
Running bond with 4″ x 16″ face



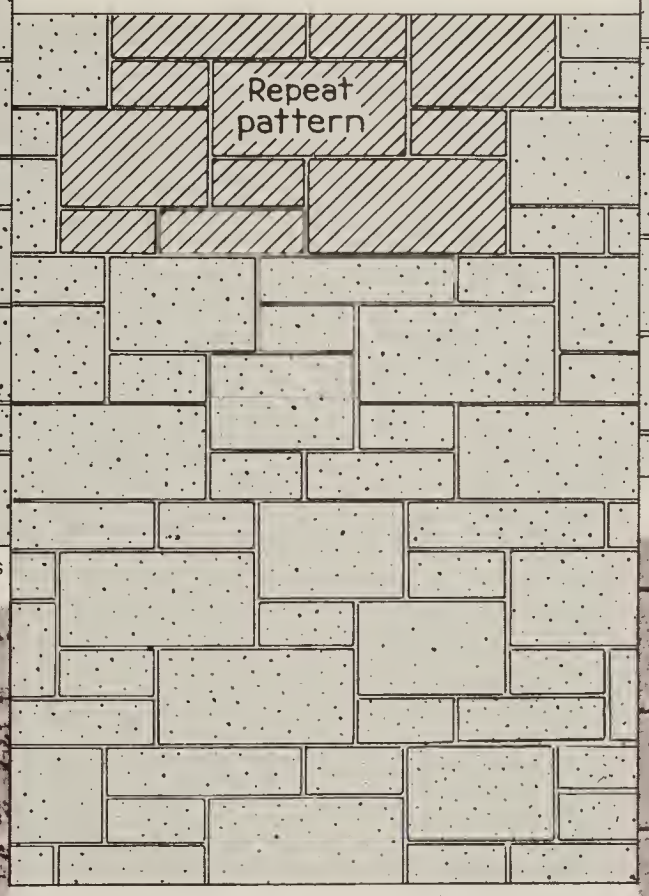
Coursed Ashlar No. 4
4″ x 16″ and 8″ x 16″ Units



8″ and 4″ courses used in combination

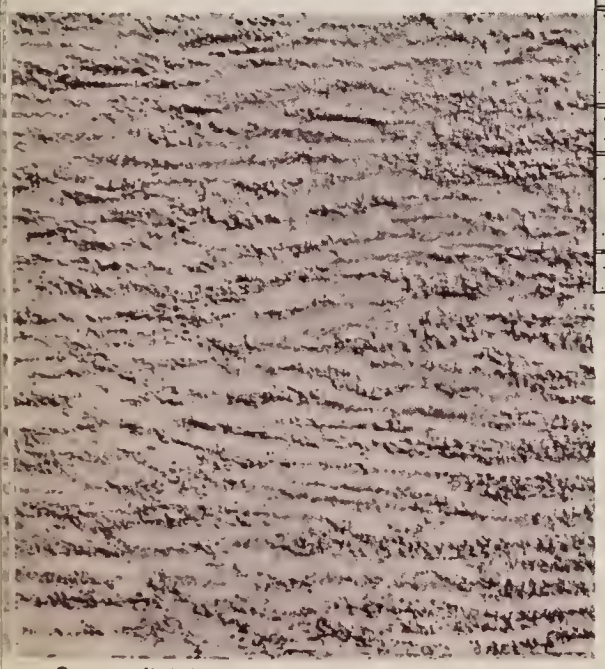


Coursed Ashlar No. 2 4″ x 16″ and 8″ x 16″ Units



Coursed Patterned Ashlar
4″ x 8″, 4″ x 12″, 4″ x 16″, 8″ x 12″ and 8″ x 16″ Units

Horizontal Stacking 8″ x 16″ Units

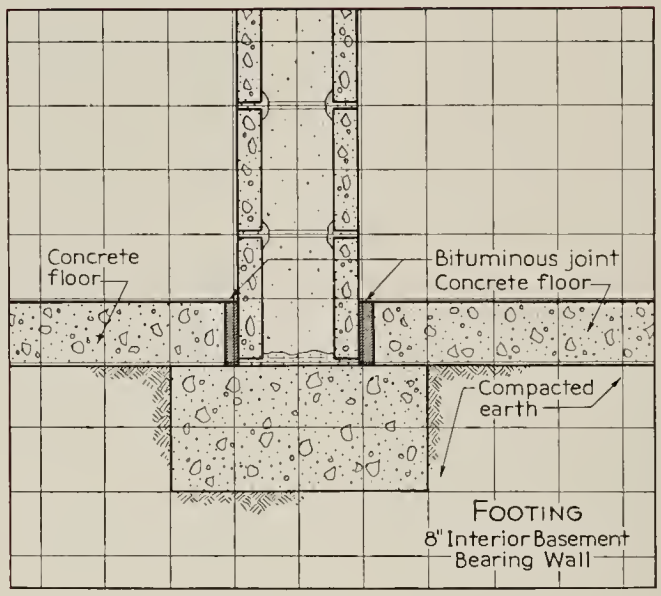


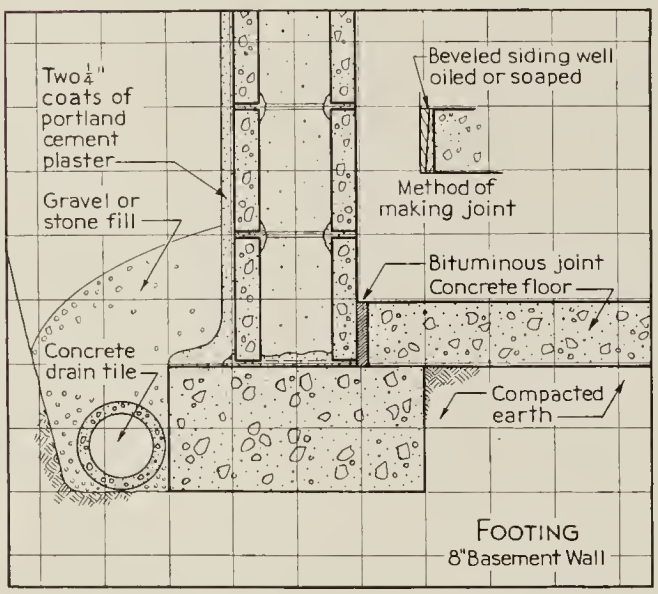
Stucco finish gives any color or texture

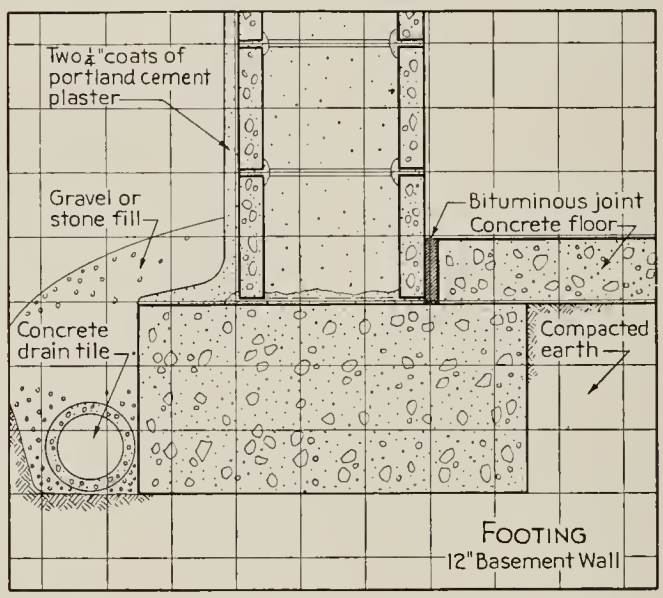
Horizontal joints v-tooled— verticals wiped out

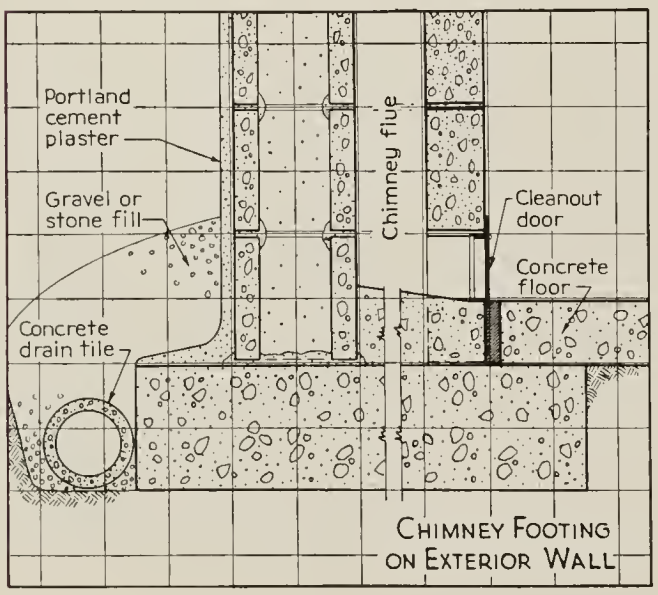
FOOTINGS FOR FOUNDATION WALLS AND CHIMNEYS

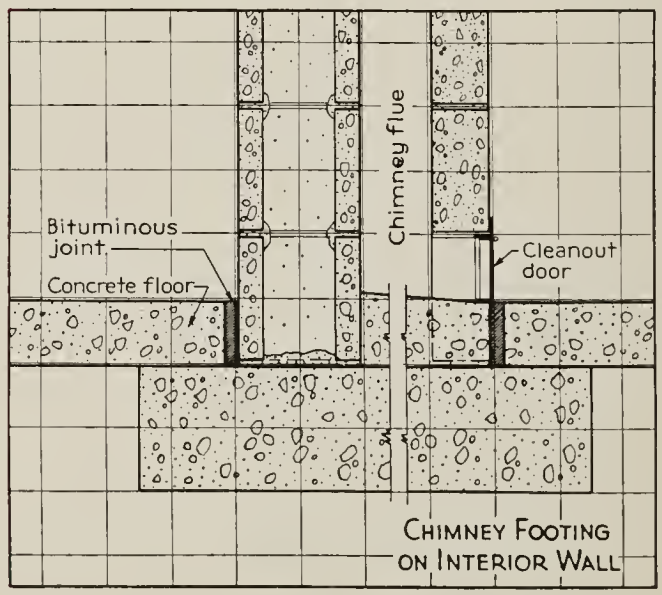
In this booklet are assembled a number of drawings illustrating various construction details for Concrete Masonry Units. Construction details have been prepared in accordance with modular coordination of design. The grid lines shown on the drawings are 4″ modular lines. These are typical designs and should only be used as a guide in the preparation of working drawings under the supervision of a qualified engineer or architect to meet local code conditions and legal requirements. All construction drawings in this booklet are copyrighted by the Portland Cement Association.



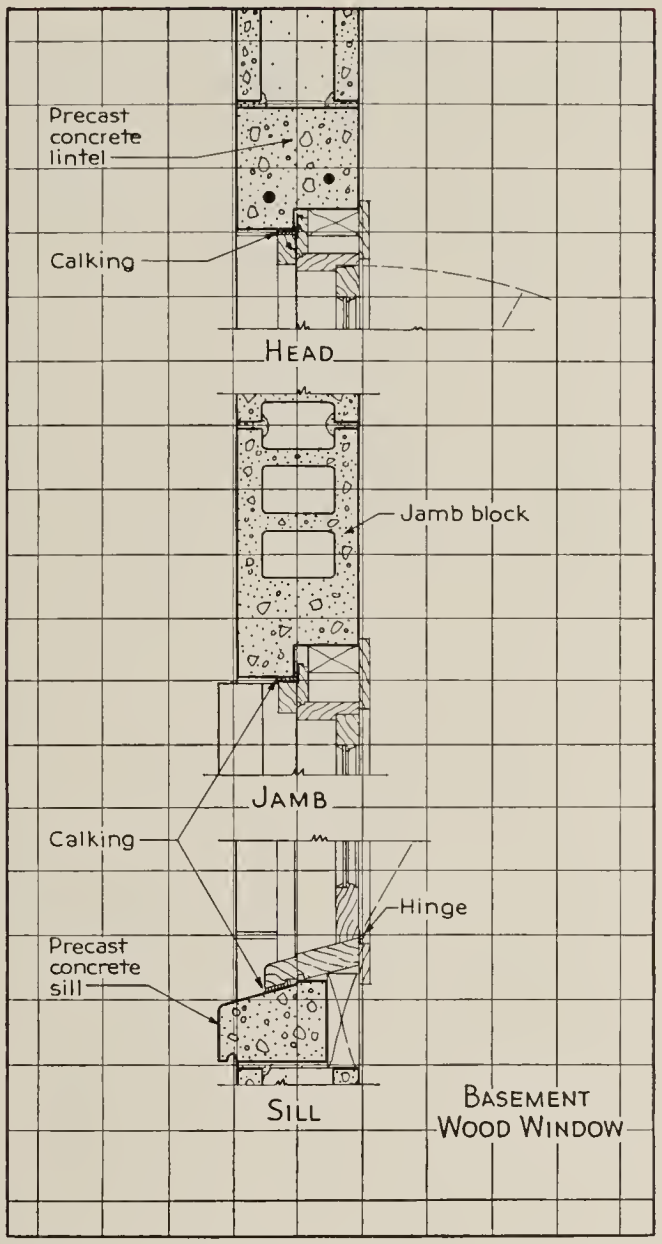


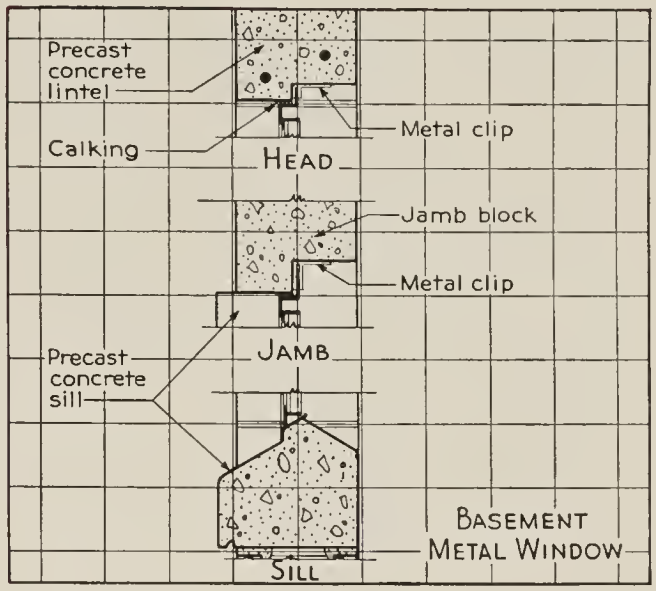


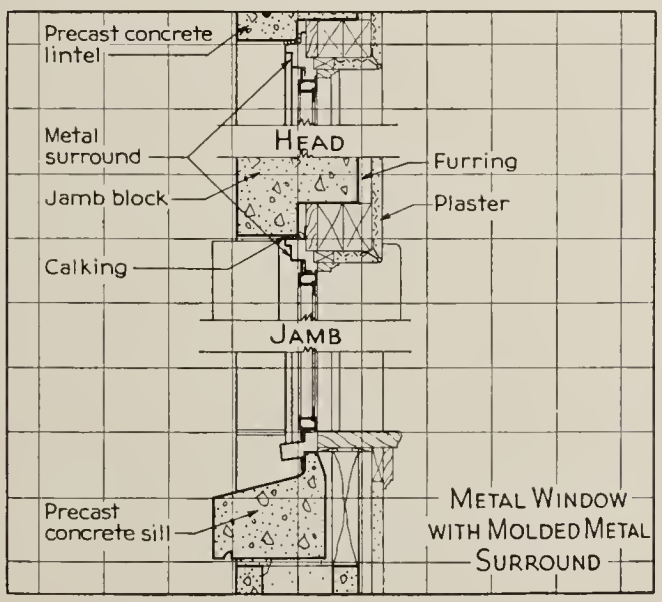


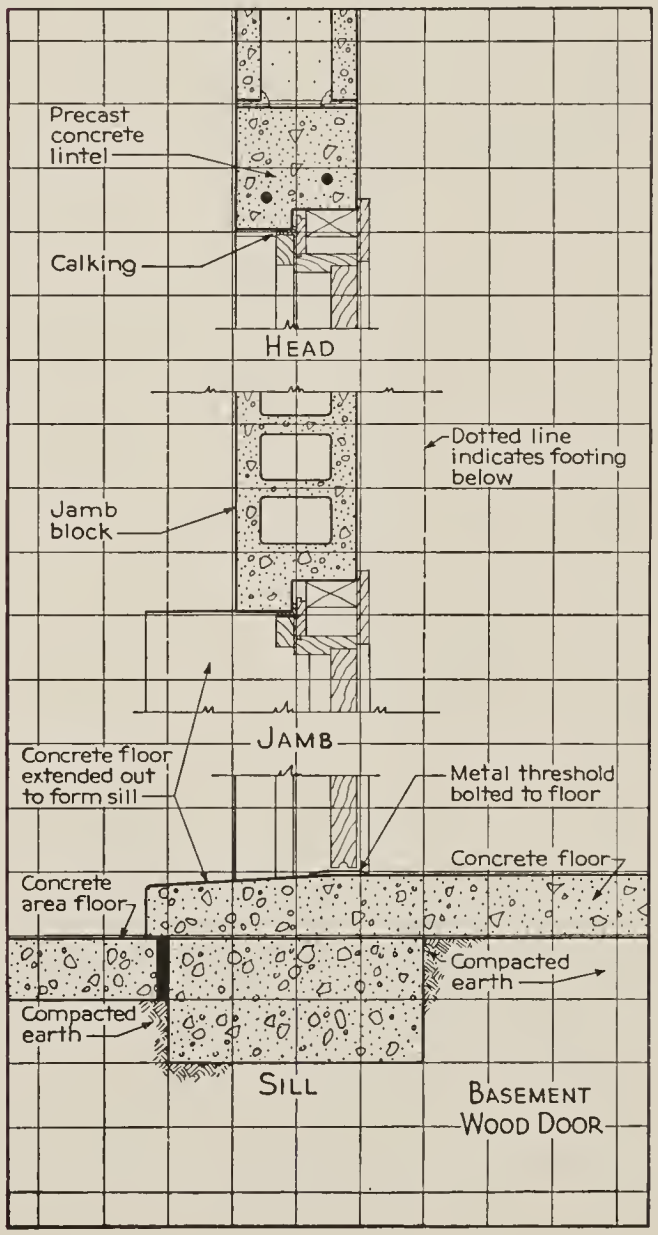


HEAD, JAMB AND SILL FOR BASEMENT OPENINGS

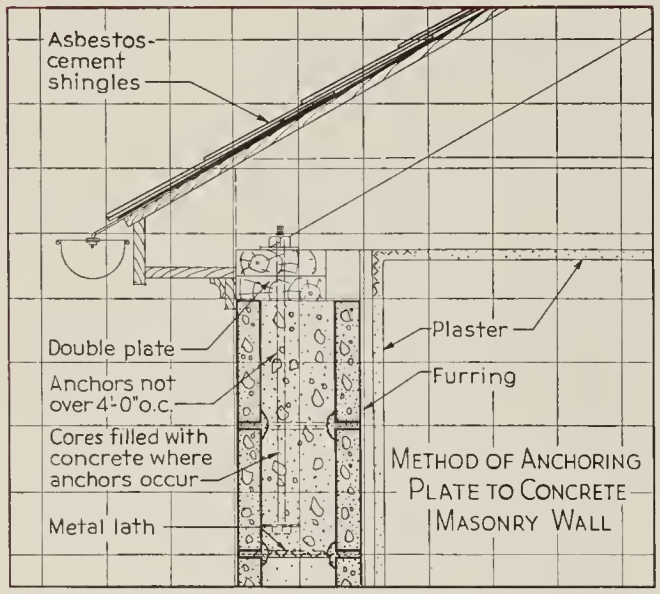




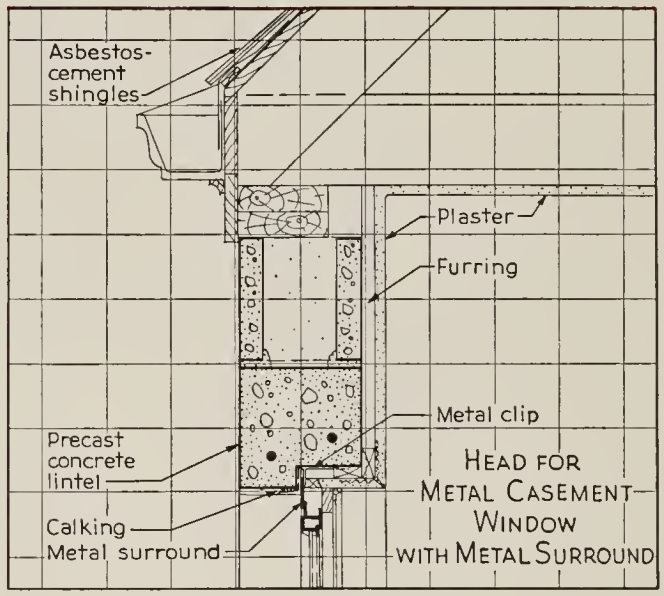




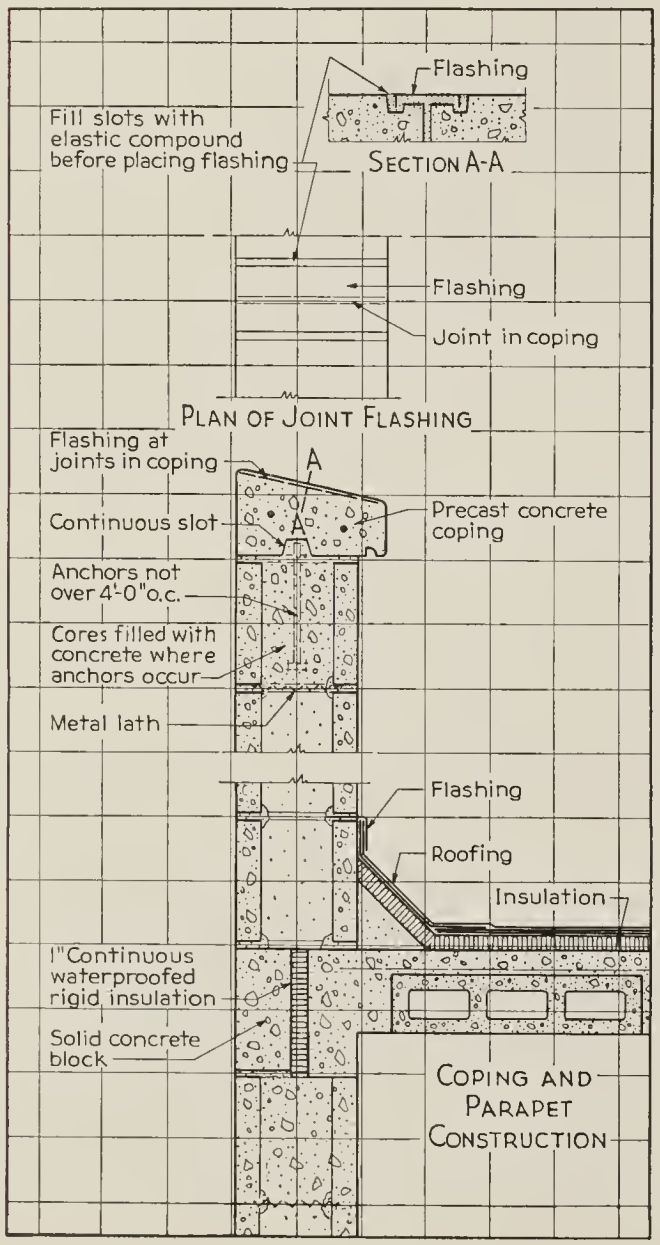
ROOF PLATE PARAPET WALLS • METAL CASEMENT WINDOWS



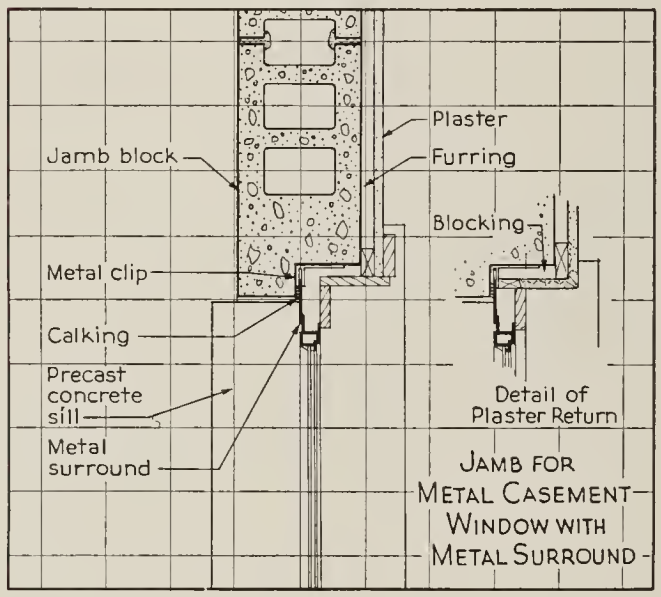
METHOD OF ANCHORING PLATE TO CONCRETE MASONRY WALL



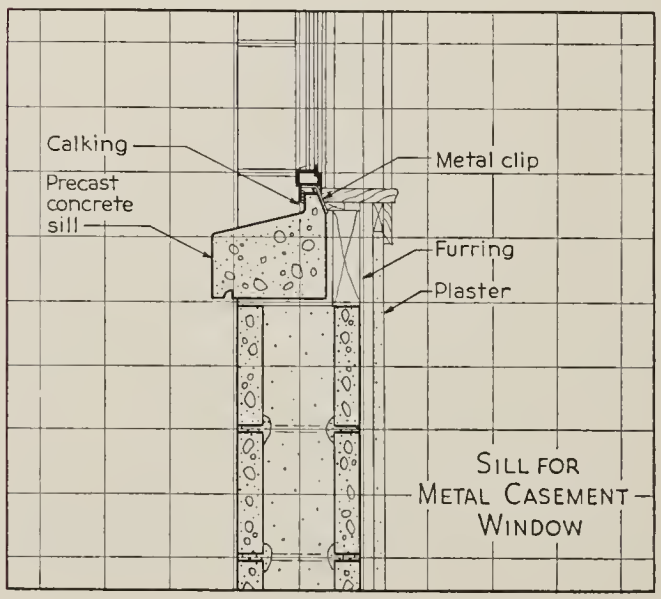
HEAD FOR METAL CASEMENT WINDOW WITH METAL SURROUND



COPING AND PARAPET CONSTRUCTION

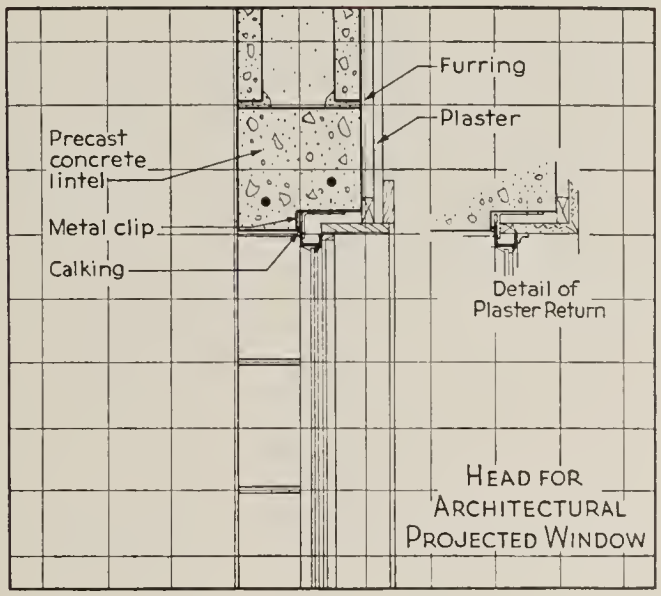


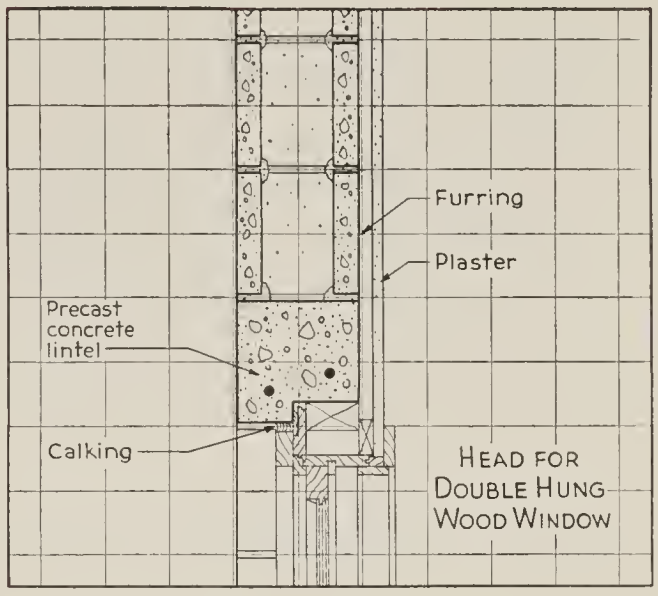
JAMB FOR METAL CASEMENT WINDOW WITH METAL SURROUND

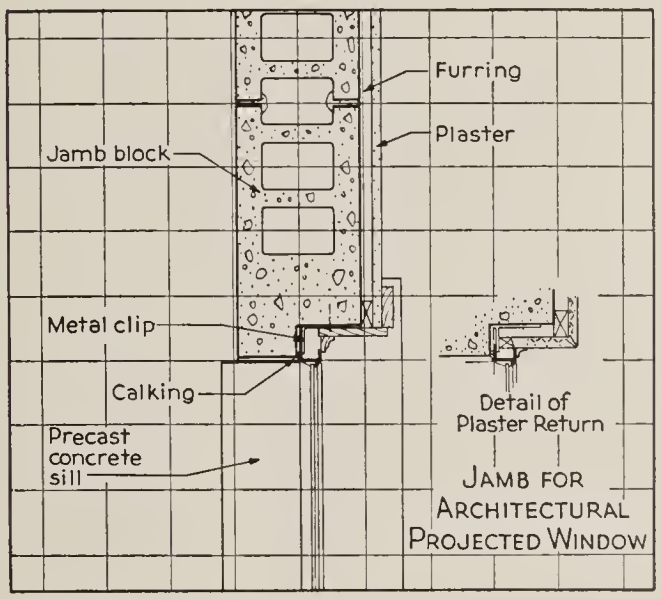


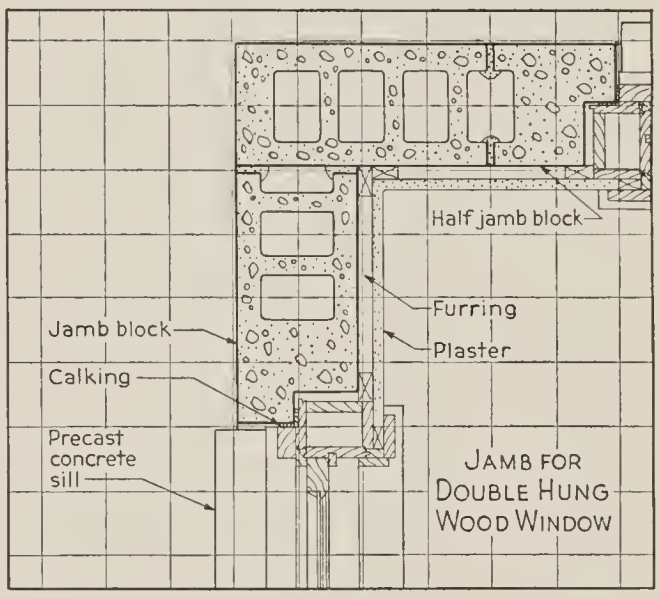
SILL FOR METAL CASEMENT WINDOW

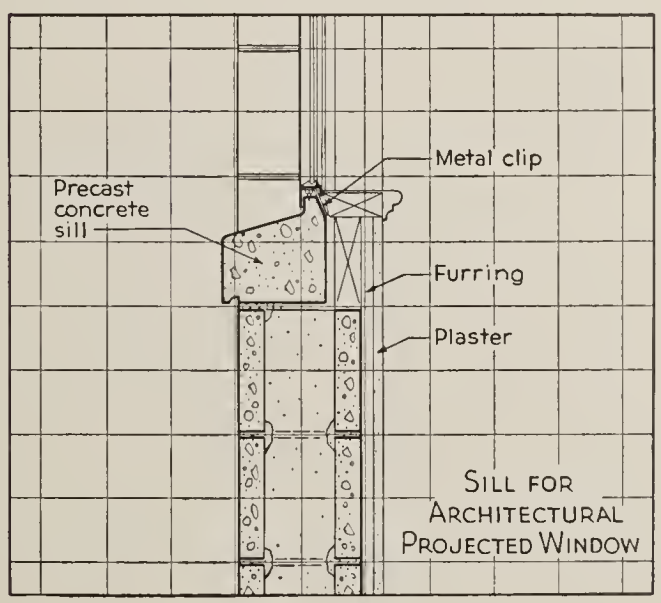
ARCHITECTURAL PROJECTED AND DOUBLE HUNG WINDOWS

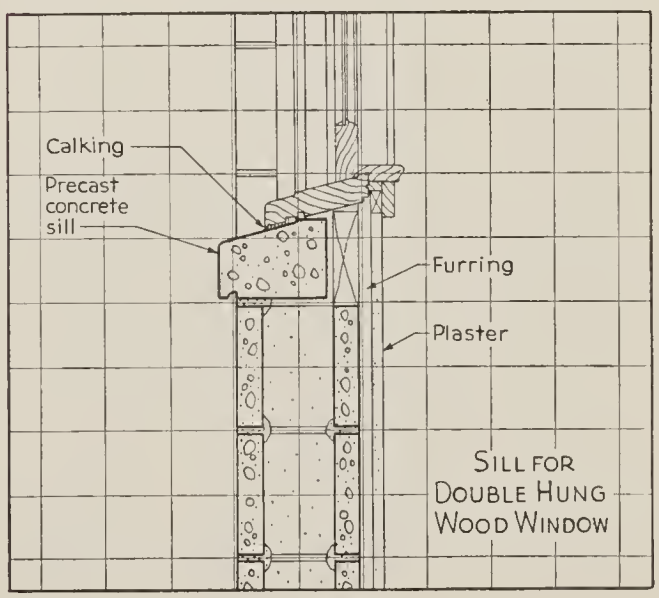




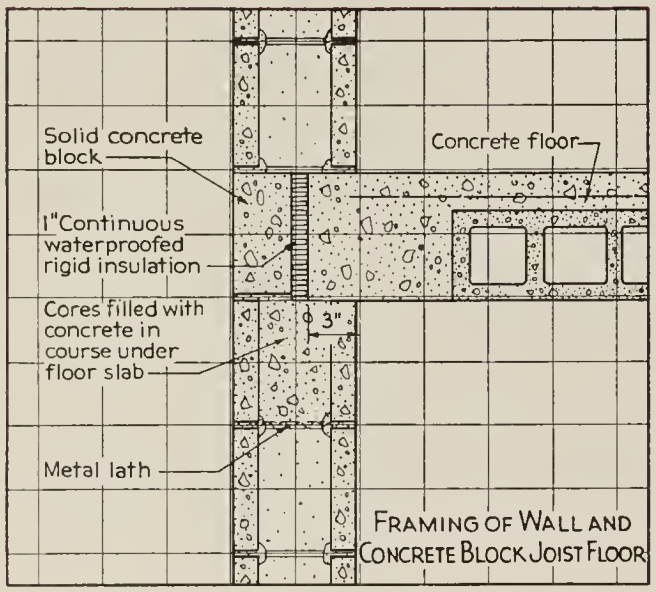




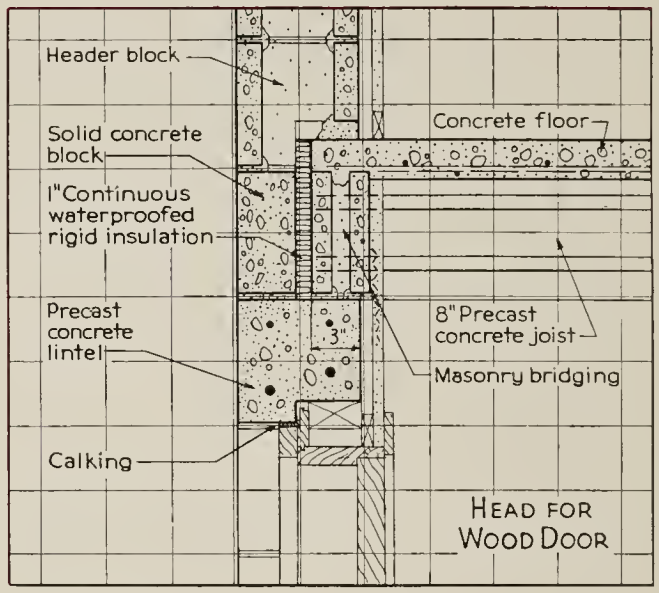




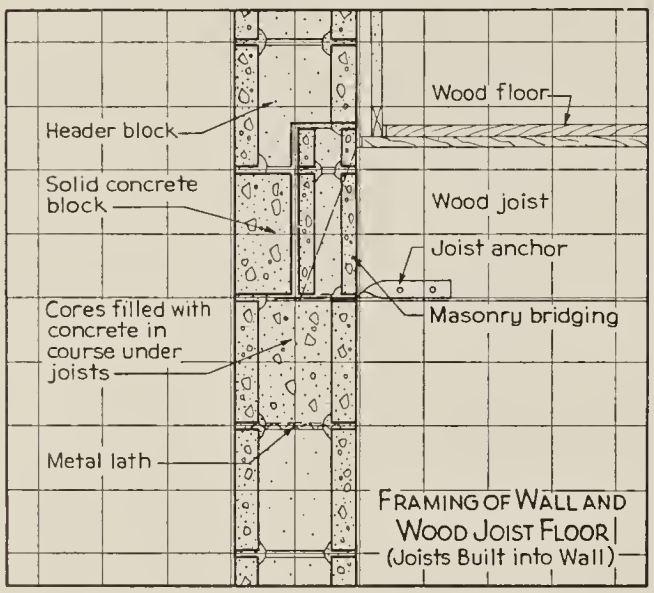
FLOOR FRAMING AND WOOD DOOR OPENINGS



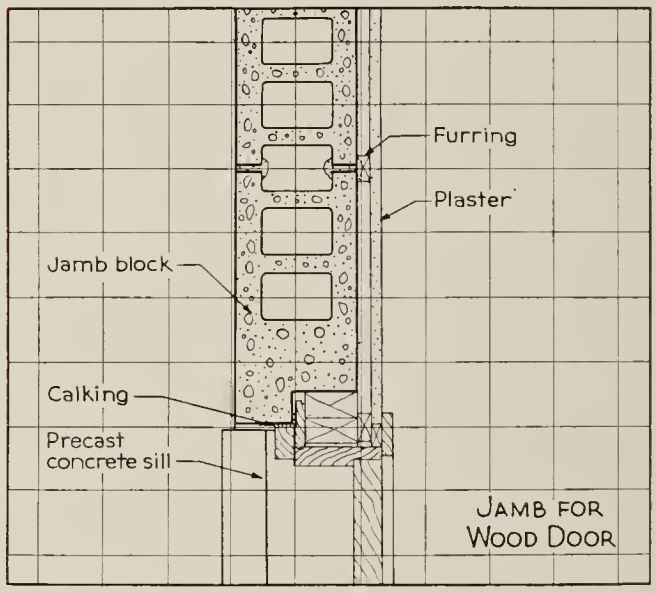
FRAMING OF WALL AND CONCRETE BLOCK JOIST FLOOR



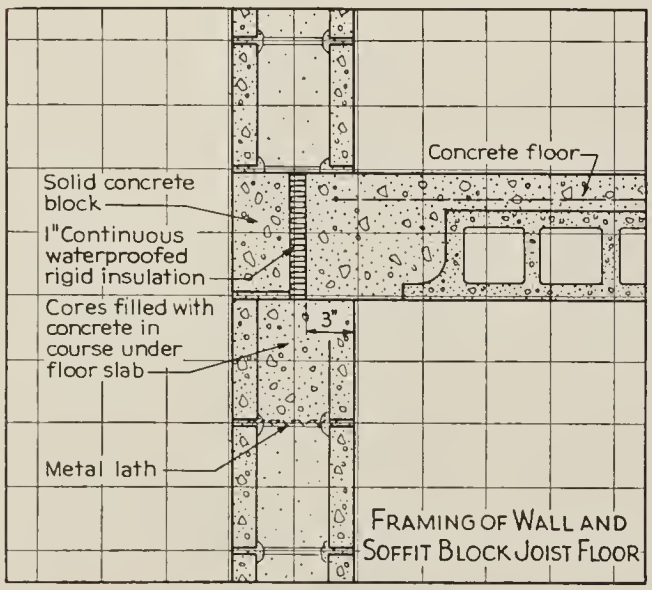
HEAD FOR WOOD DOOR



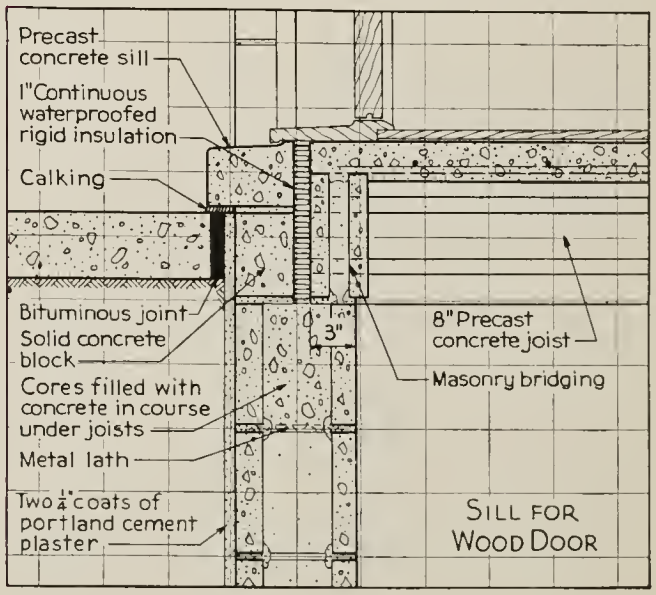
FRAMING OF WALL AND WOOD JOIST FLOOR (Joists Built into Wall)



JAMB FOR WOOD DOOR

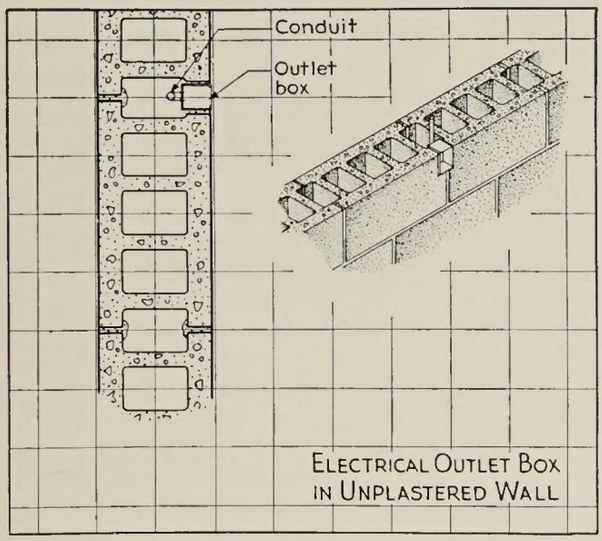


FRAMING OF WALL AND SOFFIT BLOCK JOIST FLOOR

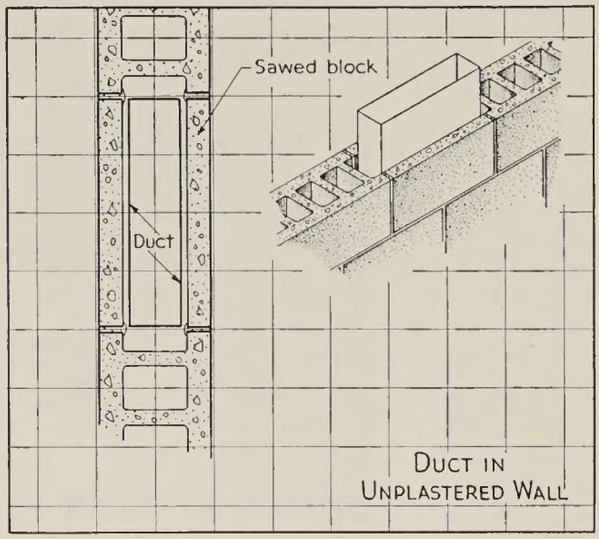


SILL FOR WOOD DOOR

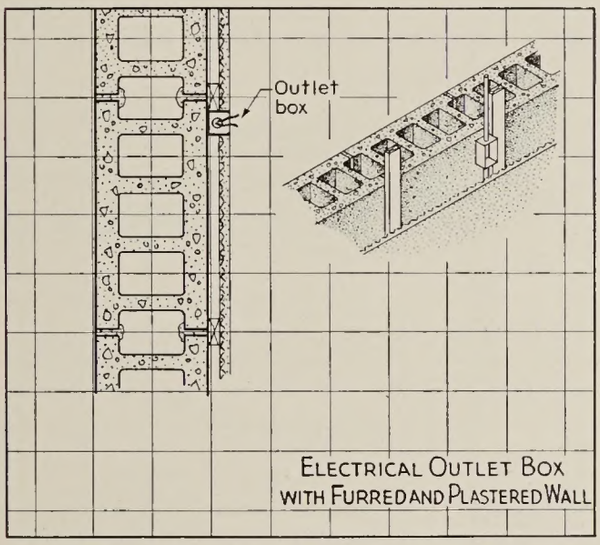
HEATING DUCTS AND ELECTRICAL OUTLETS



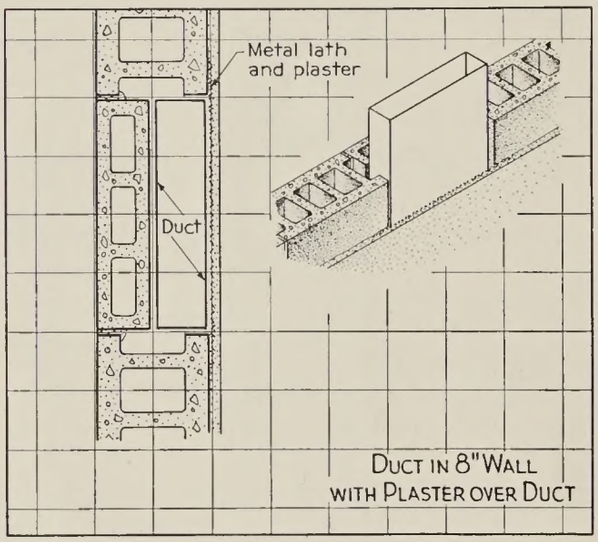
ELECTRICAL OUTLET BOX IN UNPLASTERED WALL



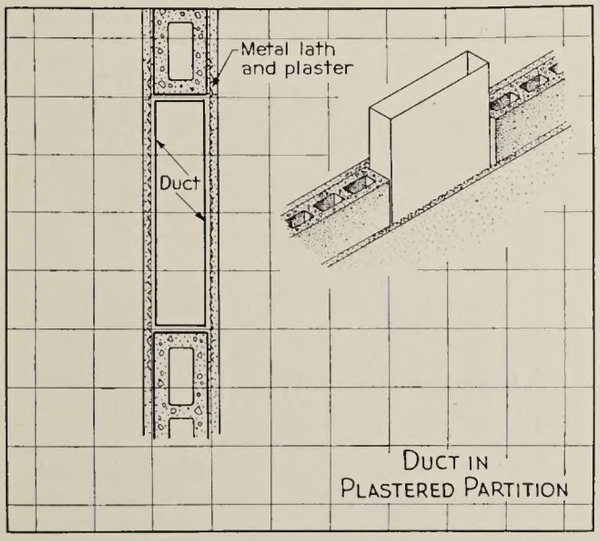
DUCT IN UNPLASTERED WALL



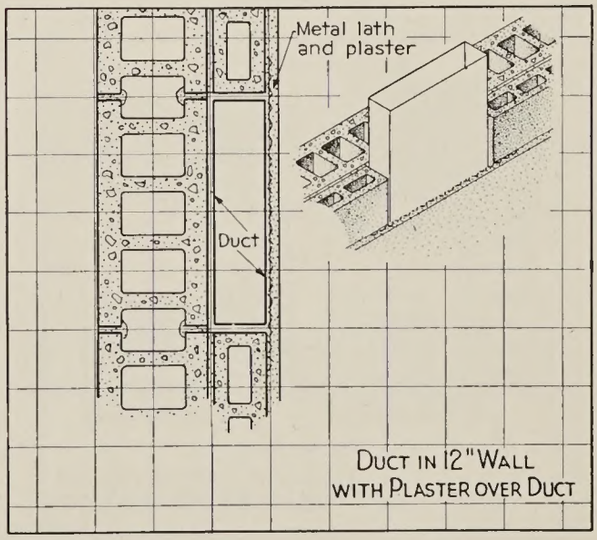
ELECTRICAL OUTLET BOX WITH FURRED AND PLASTERED WALL



DUCT IN 8" WALL WITH PLASTER OVER DUCT

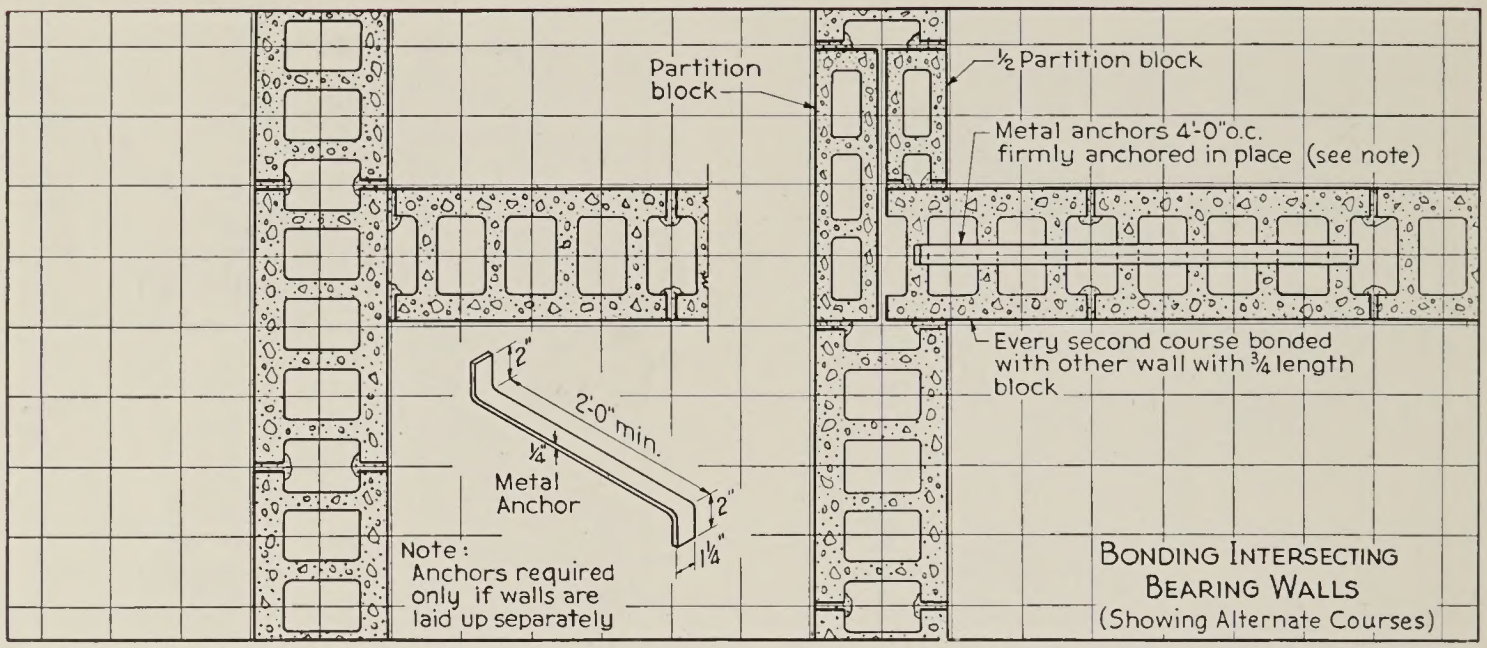


DUCT IN PLASTERED PARTITION

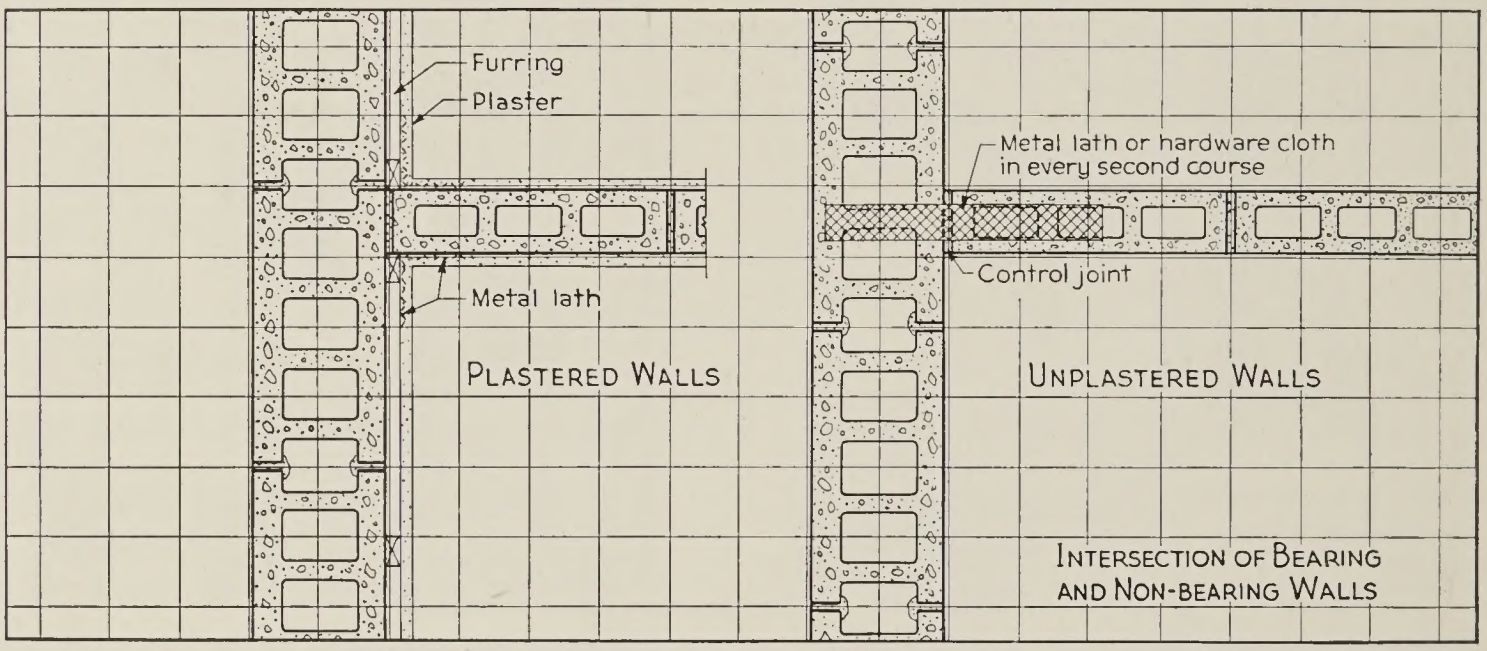


DUCT IN 12" WALL WITH PLASTER OVER DUCT

INTERSECTING BEARING WALLS AND PARTITIONS



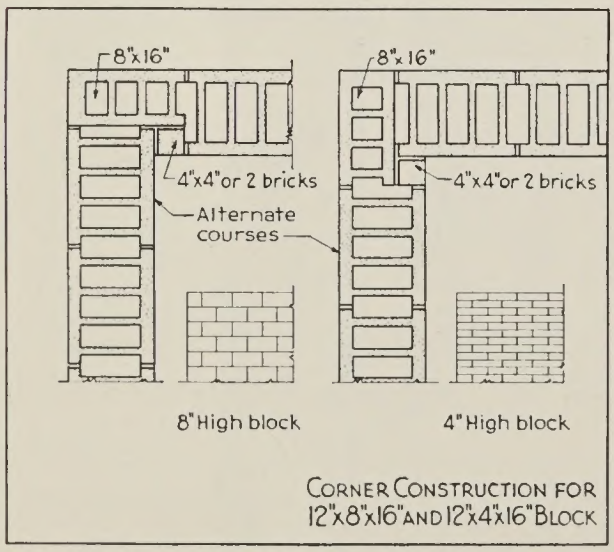
BONDING INTERSECTING BEARING WALLS
(Showing Alternate Courses)



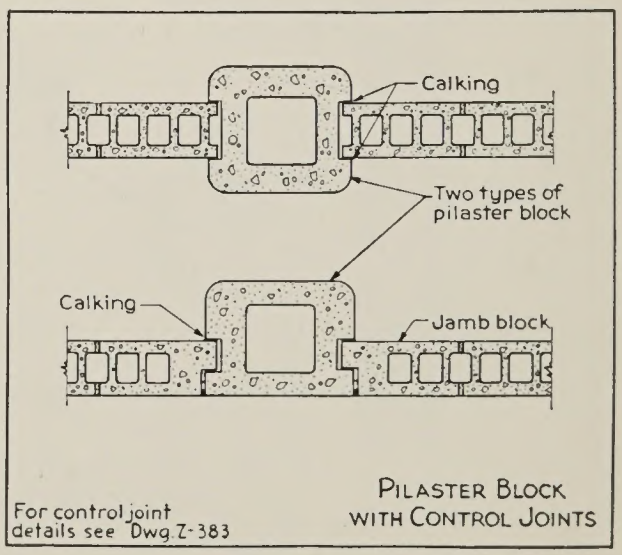
PLASTERED WALLS

UNPLASTERED WALLS

INTERSECTION OF BEARING AND NON-BEARING WALLS



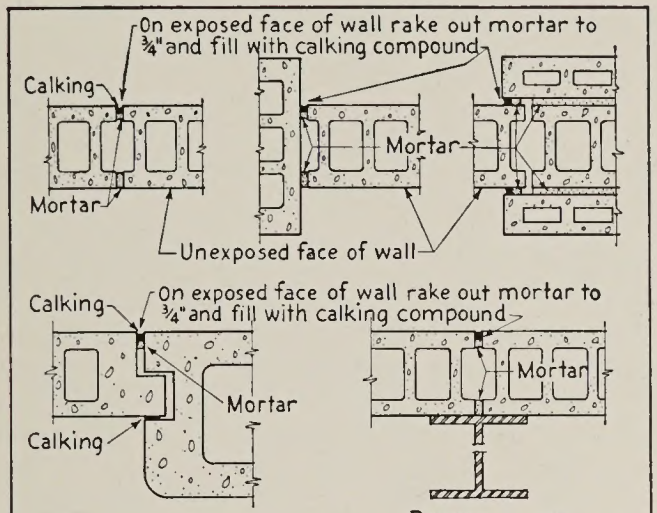
CORNER CONSTRUCTION FOR 12"x8"x16" AND 12"x4"x16" BLOCK



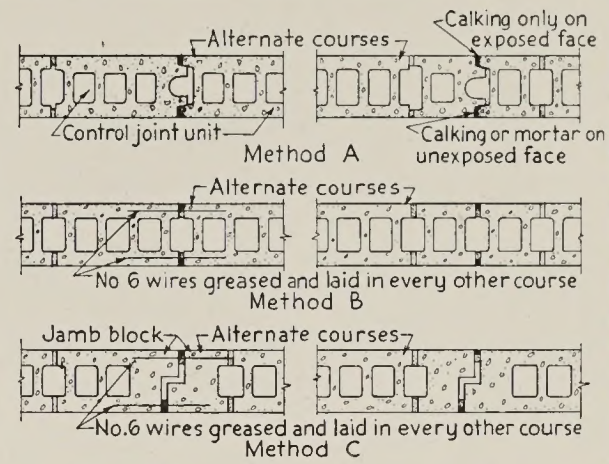
For control joint details see Dwg. Z-383

PILASTER BLOCK WITH CONTROL JOINTS

CONTROL JOINTS IN WALLS AND PILASTERS

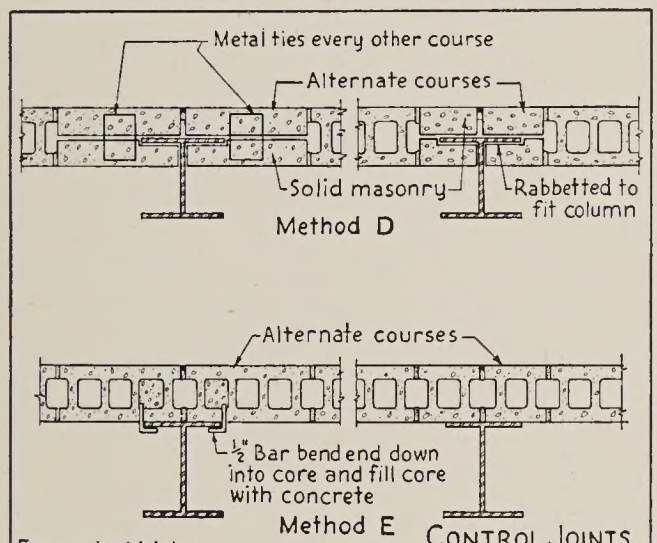


DETAILS OF CONTROL JOINTS



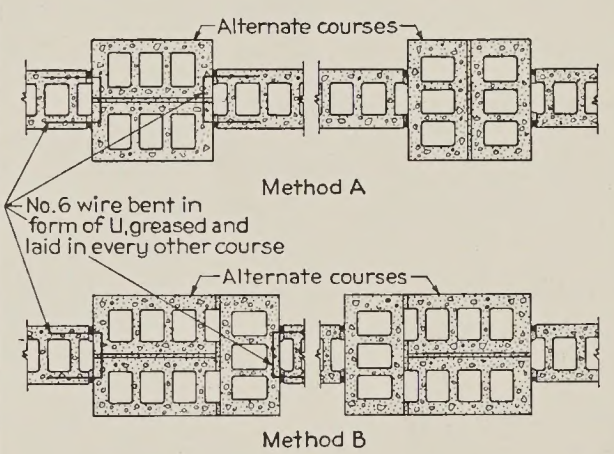
For control joint details see Dwg. Z-383

CONTROL JOINTS METHODS A, B AND C



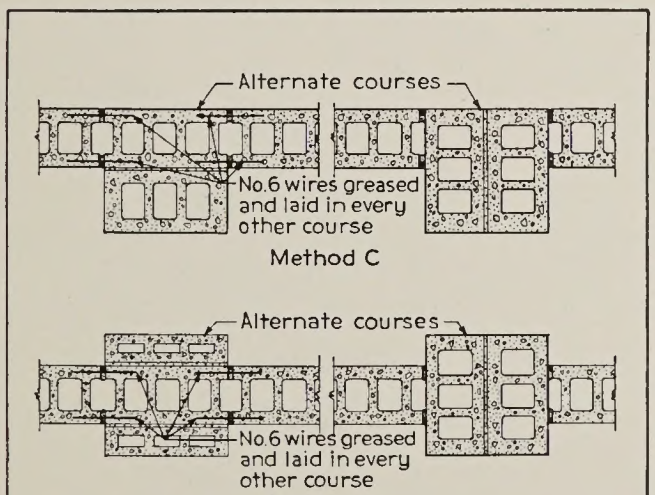
For control joint details see Dwg. Z-383

CONTROL JOINTS METHODS D AND E



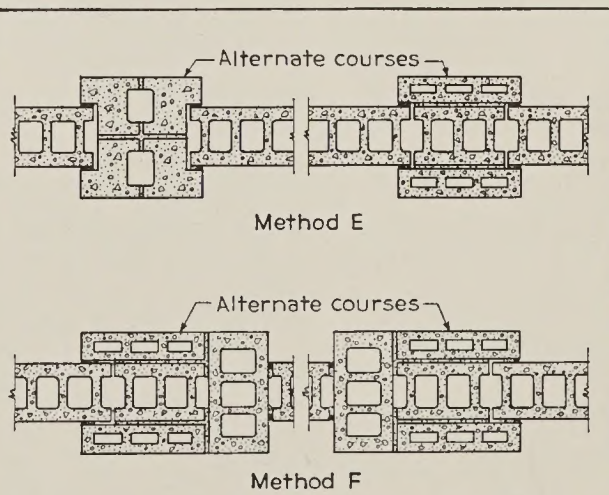
For control joint details see Dwg. Z-383

PILASTERS WITH CONTROL JOINTS METHODS A AND B



For control joint details see Dwg. Z-383

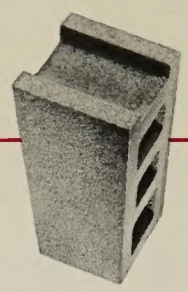
PILASTERS WITH CONTROL JOINTS METHODS C AND D



For control joint details see Dwg. Z-383

PILASTERS WITH CONTROL JOINTS METHODS E AND F

WAYLITE



CONDENSED

Masonry Specifications

GENERAL

The masonry contractor shall provide all materials and equipment required to complete the concrete footings and the concrete masonry walls of the project in accordance with the plans and specifications. The work shall be properly coordinated with that of other trades. All local laws and ordinances applicable to the work shall be fully complied with.

MATERIALS

Lightweight concrete masonry units shall be Waylite or equal and conform to the physical requirements of the local building code and the current, applicable A.S.T.M. specifications applying to the particular use or construction in which units are employed. Concrete masonry units shall be protected against wetting prior to laying in the walls.

CONSTRUCTION

1. All masonry walls shall be built to the thickness and to the bond or pattern and mortar joint treatment indicated on the plans.

2. Masonry contractor shall provide and place such special units as may be required to form all corners, returns and off-sets and maintain the proper bond.

3. Where interior concrete masonry partitions meet other interior partitions or exterior walls, a masonry bond or the equivalent in approved metal ties shall be provided.

4. Control joints and/or horizontal joint reinforcement shall be incorporated according to the details and locations shown on the plans. Joint reinforcement shall be of approved type.

5. Mortar for concrete masonry walls subject to average loading and exposure shall be made in the proportions of 1 volume of masonry cement and approximately 3 volumes of damp, loose mortar sand; or 1 volume of portland cement and 1 volume of hydrated lime or lime putty, and approximately 6 volumes of damp, loose mortar sand.

Mortar for foundation walls and other walls above grade that require extra wall strength due to severe exposure or extremely heavy loads shall be made in proportions of 1 volume of masonry cement plus 1 volume of portland cement and approximately 6 volumes of damp, loose mortar sand; or 1 volume of portland cement to which may be added up to ¼ volume of hydrated lime or lime putty, and approximately 3 volumes of damp, loose mortar sand.

6. Mortar joints shall be ⅜ in. thick with full mortar coverage on vertical and horizontal face shells. Vertical joints shall be shoved tight.

7. Mortar joints for concrete masonry walls to be exposed or painted shall be struck off flush with wall surface and when partially set shall be firmly compacted with a pointing tool. All other mortar joints shall be cut flush with the face of the wall.

8. The earth side of foundation wall shall be plastered with two ¼-inch coats with the same mortar type used in the wall. The plaster coating shall be thickened and rounded to form a cove at the base of the wall.

9. Where shown on plans concrete drain tile shall be laid with open joints around and not lower than the footings and drained to a suitable outlet with a slope of ½ inch in 12 feet. Joints between tile shall be covered with roofing felt and gravel or crushed stone fill placed 18 inches deep over the tile. Earth backfill to grade shall be sloped away from foundation wall. Backfilling against the foundation walls shall not be permitted until first floor framing is in place.

10. At the conclusion of the masonry work, contractors shall remove mortar daubs, smears and clean down the walls, remove all scaffolding and equipment used in the work, clean up all debris and surplus material and remove same from premises.

Further information regarding Waylite and its uses may be obtained from our main offices.

Eastern Office: P.O. Box 30, Bethlehem, Pennsylvania.
Western Office: 20 N. Wacker Drive, Chicago 6, Illinois.
Plants: Youngstown, Ohio; Duluth, Minnesota; Harrisburg, Pennsylvania; Philadelphia, Pennsylvania; Two in Bethlehem, Pennsylvania; and Two in Chicago, Illinois.

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